

LIVE CINEMA:

Language and Elements

by Mia Makela

MA in New Media

Submitted to the New Media program,

Media Lab, Helsinki University of Art and Design

April 2006



This thesis is protected by CREATIVE COMMONS licence.
www.creativecommons.org

Abstract

This thesis reviews and explores the influences, characteristics and elements of live cinema, a recently coined term for realtime audiovisual performances. The thesis discusses the possible language of live cinema, and proposes “vocabulary and grammar” for this contemporary field.

Keywords

live, live cinema, realtime, visuals, performance, participation, projection, VJ, cinema, language, digital, space, time, loop, laptop, software, montage, composition, effect, synthesiser, software, magic lantern, shadow theatre, synaesthetics, color music, visual music, lumia, expanded cinema, Gesamtkunstwerk

Contents

Title
Abstract
Table of contents

1. INTRODUCTION	4
1.1. Motivation	
1.2. Introduction	
1.3. Contributions	
2. BACKGROUND	9
2.1. Shadow theatre	
2.2. Magic Lanterns / Cinematography	
2.3. Colour Music / Lumia	
2.4. Video Art / Extended Cinema	
2.5. Non-narrative cinema	
3. ELEMENTS OF LIVE CINEMA	22
3.1. Space	
3.1.1. Digital space	
3.1.2. Desktop space	
3.1.3. Performance space	
3.1.4. Projection space	
3.1.5. Physical space	
3.2. Time	
3.2.1. live versus real time	
3.2.2. Loop	
3.3. Projection	
3.3.1. Spatial projections	
3.3.2. Media facades	
3.4. Performance	
3.4.1. The role of laptop performer	
3.4.2. “Liveness”	
3.4.3. Gestural interfaces	
3.5. Participation	
4. LANGUAGE OF LIVE CINEMA	52
4.1. Cinema language versus live cinema language	
4.2. Montage	
4.3. Composition	
4.4. Visual effects	
5. CONCLUSIONS	67
Bibliography	

1. INTRODUCTION

1.1. MOTIVATION

This thesis explores LIVE CINEMA, also known as the practice of creating audiovisual realtime performances. One of my motivations for choosing this subject is my own work, which consists of live cinema performances and workshops. I have noticed a huge wave of interest towards this creative form, even though there is still a lack of available information. It would seem that realtime performances still belong to the underground, even though museums and cultural events have started to include live audiovisuals in their program. Nevertheless, it is difficult to find any critiques or reviews of audiovisual performances in the art or commercial publications, as this creative practice still seems to be linked to club scene and VJng, (Video Jockeying)¹, and considered to be entertainment rather than an art form.

It would also appear that until recently no books covering realtime audiovisual creation existed, even though the practice has a long history and tradition. One reason for this could be that it is difficult to describe exactly what live cinema constitutes; it includes many different fields, such as music, visuals, performance public participation, etc. There is a clear lack of discussion about the contents of live cinema, which is not helping in the development of this practice. Furthermore, if vocabulary and grammar are missing, discussing content becomes a challenge.

My main objective in writing this thesis is to map the essential elements and characteristics of live cinema and to offer insights which I have learned from my practice and studies in this field during recent years. My focus encompasses certain elements, which I have found to be paramount in live cinema and reflect upon them. Therefore, I attempt to build “live cinema grammar”, as my hypothesis for the thesis is that there is a live cinema language in existence, it has simply not been written yet.

¹ The term “Video Jockey” was first used to describe people who presented music videos on MTV, and from there the term metamorphasized to include video performance artists who create live visuals for all kinds of music.

About my background:

I have dedicated my entire adult life to creating images and visual worlds. I started studying art in 1993, and discovered that multimedia and video are my chosen fields. I was greatly inspired by the idea of Gesamtkunstwerk - union of senses - an idea launched by Wagner², has always been attractive for me. I have been always interested in diverse forms of creation: Photography, music, video and design. After a decade working on screen based media; creating multimedia, websites and digital contents, I found the pioneering realtime visual software MAX/MSP/NATO³ in 2000 which, combined with the production of affordable laptops, began the revolution for live visuals. This meant that it was finally possible for me to get out into the world and show my visual worlds to the public in live situations, rather than producing works and sending them to exhibitions. This affected my creative process, by enabling me to combine intuition and improvisation in a live environment, and has had a profound influence on my whole life style.

² According to <http://en.wikipedia.org/wiki/Gesamtkunstwerk>: "Gesamtkunstwerk ("total work of art", or "complete-art work") is a German term attributed to the German opera composer Richard Wagner which refers to an operatic performance which encompasses music, theater, and the visual arts. He felt that in ancient Greek tragedy, these had been fused, but at some point they drifted apart – he was critical of current opera which he felt emphasized the music too heavily and did not contain quality drama. Literally meaning "synthesis of the arts", the term is also commonly used (especially by Germans) to describe any integration of multiple art forms."

³ NATO.0+55+3d modular, authored by 0f0003.MASCHIN3NKUNST, released around the year 2000, comprises a set of QuickTime externals for Max

1.2. INTRODUCTION

LIVE CINEMA is a recently coined term for realtime audiovisual performances. Even though the term is new, the art form has a long trajectory. It is not easy to discuss this creative practice though, as there does not seem to exist written theory or complete history available. Recently, some writers started to pay attention to this visual practice, like Annette Dekker who has written articles about the sociopolitics of VJ culture⁴, Paul Spinrad who has published “The VJ Book”⁵ and Timothy Jaeger, who has written the book “Live Cinema Unravelled”⁶.

What is still missing is analysis about the content of the works. It seems that content has been the “sore point” of realtime audiovisual practice. Many VJs seem to avoid the subject altogether, preferring to concentrate on the act of mixing, rather than creating new content. It is relatively easy to use material from TV and films and there are websites where one can buy/exchange video clips.

Many VJs do not have an artistic background, and experimenting with new visual tools might have been one of the driving motivation to create visuals within this diverse field. VJing can be used to design video wallpapers, for fun or as a technical hobby amongst other possibilities. Besides the traditional VJing practice, which takes place in clubs and parties, there are also creators whose approach to visuals is artistic and who work in the realm of live cinema.

In order to clarify the characteristics of live cinema I shall compare them with those of traditional cinema and Vjing. As the name already implies, live cinema should have something to do with cinema, even though the live context makes the process and practice quite different to cinema’s methods. Cinema has its own language, which is based on montage, a linear organisation of shots in order to tell a story. Live cinema already has a language, even though the lack of references makes it challenging to describe. Audiovisual realtime performance still seems to be unconquered territory in the theoretical sense.

In this thesis I will explore what constitutes the basic elements of live cinema and reflect on their effect on live cinema language, which, until now, only exists as a “spoken language” without written grammar. In search of a trajectory to prove my hypothesis, I began defining live cinema by its components: What is needed in order to perform visuals in realtime? I decided to concentrate on five elements: SPACE, TIME, PERFORMANCE, PUBLIC and PROJECTION, as these elements are present in all live cinema performances. I will reflect on the characteristics

⁴ Dekker, Annet: Synaesthetic Performance In the Club Scene

⁵ Spinrad, Paul :The VJ Book

⁶ Jaeger, Timothy: Live Cinema Unravelled

of each essential element and offer categories and terminology in order to create vocabulary for the proposed live cinema language. As there are many different genres in live cinema, and as the material can be both abstract and figurative, it is impossible to name just one approach in order to create meaning in a performance. live cinema performance can be experienced as “live painting” as well as “live montage”. In this thesis I propose montage and composition as possible tools for creating a performance. I also discuss the meaning and background of visual effects in live performance, as they play a crucial role.

I have studied the history and possible influences of live cinema in order to get a better idea of the background of the subject. No written history for realtime audiovisual performances exists, although it seems that most writers agree on certain influences such as colour music and expanded cinema. These agreements are helpful in tracing the trajectory of live cinema. Historically, live cinema has many different faces and elements like projection, space and audience participation. Furthermore, these influences are technological as well as artistic.

The goal of this thesis is to explore the essence of live cinema, rather than offer a comprehensive study of realtime audiovisual performance. For this reason I have focused exclusively on the elements and concepts that I consider essential for live cinema.

1.3. CONTRIBUTIONS

Laura Baigorri

Kirsi Rinne

Asta Raami

Sairica Rose

Magda Skylla

2. BACKGROUND

2.1. SHADOW THEATRE

I would argue that the beginning of live cinema can be traced back to projection. The sun was the first projector, projecting shadows on the ground in a naturally “live” situation. The earth served as the projection surface. Later it was fire which served as the source of projections. There are various traditions of projecting with fire such as Wayan Kulit, Indonesian shadow theatre, where humanesque figures made of buffalo leather are moved with the help of sticks by the “dalang”, the puppeteer, behind a screen, while the light of an oil lamp projects the shadows of these decorative figures to the public. Wayan Kulit performances are normally held on religious occasions or form part of purification ceremonies, which transforms these performances into rituals. The dalang also functions as a medium through which the people can learn about their classical literature.



Wayan Kulit

Rainer Reusch, Director of the UNIMA International Shadow Theatre Centre in Germany writes the following about the shadow theatres⁷ : “In contrast to the traditional Asian shadow theatre, this contemporary form is not very well known. Until just a few years ago it – quite literally – stood in the shadow of other forms of puppet theatre. It was not until the 17th / 18th centuries that shadow theatre was brought to Europe from the lands in Asia in which it originated. The fact that it did not become firmly established in Europe until the middle of the 20th century lies in the different philosophy in Europe. The European life style is based upon reason, intellect and rationale. The more comprehensive way of looking at the life of the people of the Far East, for whom dream, meditation, transcendentalism and spiritualism are regarded as just as important as reason, is unknown in Europe and is, therefore, rejected. The European cannot come to terms with the non-existence and lack of physical reality of a shadow, nor with its position between dream and reality. The European is much more at home with tangible, three dimensional figures (glove

⁷ "http://www.schattentheater.de/files/english/uebersicht/files/weitere/contemporary_shadow_theatre.pdf"

puppets, marionettes etc.).

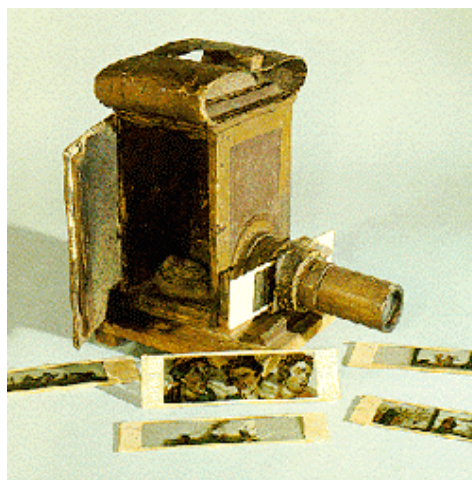
With only a very few exceptions such as “Théâtre Séraphin” (1770)(in Versailles which survived the French Revolution and ran until the 1850s*) and “Cabaret du Chat Noir (1887) and in the 20th century the Schwabinger Schattentheater of Otto Kraemer and Lotte Reiniger in Germany, Jan Malik in the Czech Republic and Frans ter Gast in the Netherlands, shadow theatre was not regarded as an art form. “

2.2. MAGIC LANTERNS AND CINEMATOGRAPHS

The Magic Lantern was the earliest form of slide projector. The first published image of the device appeared in *Ars Magna Lucis et Umbrae*, by Athanasius Kircher in the late 1600's. Images were painted on glass and projected on walls, cloth drapes, and, sometimes, on a wet cloth from behind the "screen". More advanced models used three separate lenses and were capable of optical effects such as dissolves and mixes. Some slides were capable of achieving simple animation sequences. To see images appear was “magical” in those days. Until movies came along, in the mid-to-late 1890's, the magic lantern was the sole projection device available.⁸



Magic Lantern projectionist

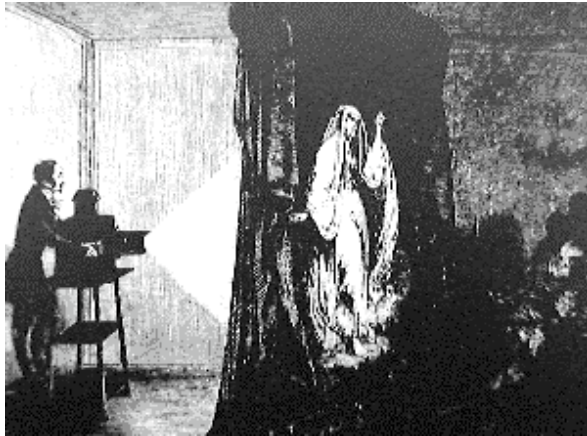


Magic Lantern

“Different forms of projecting devices have been in use since the Middle Ages (or maybe even earlier). Best known of these early experiments are perhaps the projecting “crystal balls”. Parabolic mirrors with a picture painted on the surface were also in use, as well as “hole” projectors and lanterns that could produce shadows on walls. Magicians and entertainers were probably the first to find practical uses for projection devices as objects to create fantastic illusions in their performances. During the late 1700s and the early 1800s itinerant showmen travelled from town to town giving shows with small tin lanterns similar to the *Lanterne Carrée*.

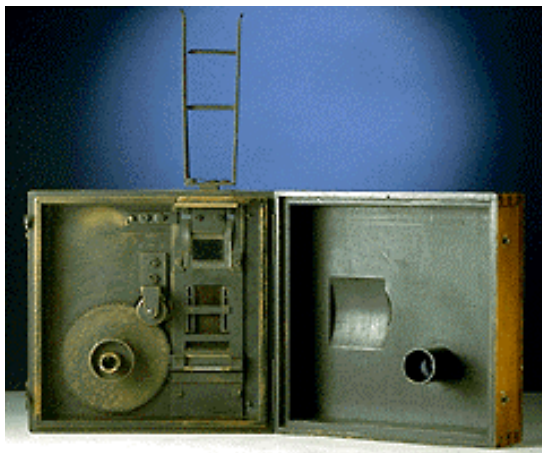
⁸ An introduction to film studies edited by Jill Nelmes

In 1798, a Belgian, Etienne-Gaspard Robertson, took magic lantern projection to a new level of showmanship. Robertson created a complex magic lantern “horror show” in a chapel just outside of Paris. Using multiple projectors, projecting on smoke, and interjecting spooky sounds to enhance the overall effects, Robertson created a spectacle that frequently caused his customers to faint. He advertised that doctors were on hand at all performances of his Phantasmagoria.”⁹



Magic lantern show

Auguste and Louis Lumiere are credited with the world’s first public film screening on December 28, 1895. A showing of approximately ten short films lasting for a total of twenty minutes was held in the basement lounge of the Grand Cafe on the Boulevard des Capucines in Paris and would be the very first public demonstration of their device they called the Cinematograph. What Lumiere invented was a portable motion-picture camera, film processing unit and projector called the Cinematographe, three functions covered in one invention.



Lumiere brothers: Cinematograph

The Lumiere brothers were not the first to project film. In 1891, the Edison company

⁹ Mats Rendel: Athanasius Kircher <http://user.bahnhof.se/~rendel/engint.html>

demonstrated the Kinetoscope, which enabled one person at a time to view moving pictures. Later in 1896, Edison showed his improved Vitascope projector, the first commercially successful projector in the U.S, which was later replaced by Projectoscope (1896). Other projectors included Eidoloscope projector (1895), Phantoscope (1895), Projectoscope (1896) amongst others.

2.3. COLOR MUSIC / LUMIA

Spirituality has been long connected to light: The Egyptians thought of the sun as their god Ra's watchful and protecting eye.¹⁰ Padre (father) Castel may well have been inspired by the stain glass windows of the church as he drew his plan for a "color organ" Clavessin Oculaire, in order to project changing colours with candle lights while pressing the keys of the organ. Following his example, many other inventors created their color organs, including Bainbridge Bishop and Alexander Wallace Rimington.



Bainbridge Bishop: Color Organ



Alexander Rimington: Color-organ

The color music and visual music traditions focus on the synaesthetic experience, which describes the neurological condition of mixing the senses. A synaesthete may, for example, hear colours, see sounds, and taste tactile sensations. That means that the perception of one stimulus evokes a second perception. Music can be seen as colors and colors can be heard as sound. In the beginning of the 20th century scientists, artists and musicians showed great interest in creating a correlating system between color and sound. Even the paintings of Kandinsky were considered to form part of the synaesthetic movement, and theorists like James Michelson and William Huntington Wright suggested that a new "color art" form was born, where painters would stop painting objects and concentrate on colour. Willard Huntington Wright writes :

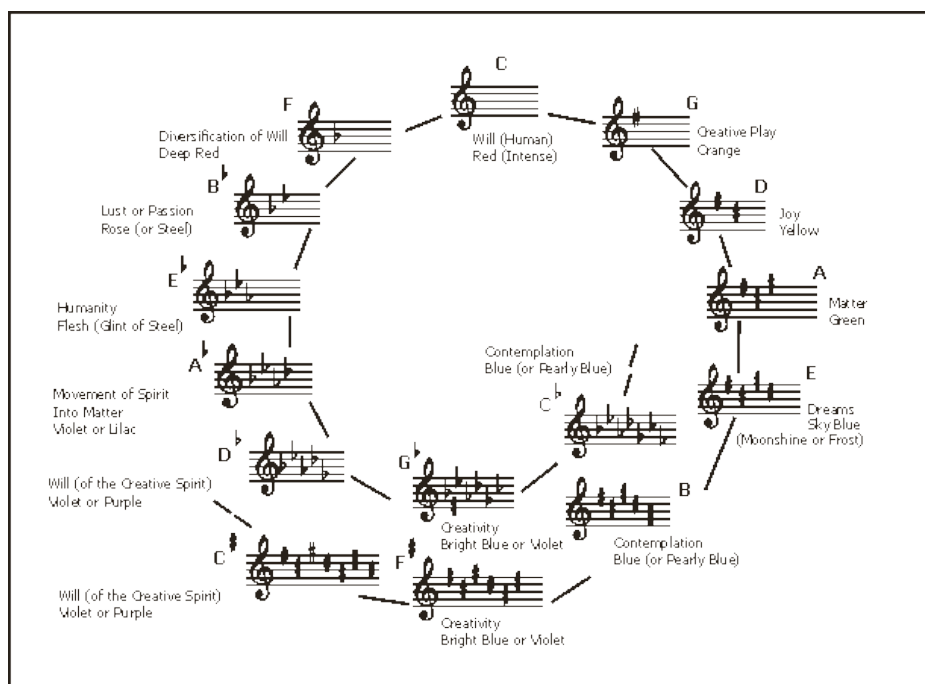
"The truth is that so-called modern painting is not an art of painting at all. The experiments and researches into pictorialism since 1800 have been along the lines of an entirely new art - an art basically distinct from that of painting - an art whose purposes, impulses, motives and final goal are intrinsically different from those of the art of painting. "Modernist painting" against which

¹⁰ Arthur Zajonc: *Catching the Light : The Entwined History of Light and Mind*

the advocates of academic painting have protested so bitterly, is, in reality, an art of colour”¹¹

The concept that color and musical harmony are linked has a long history, intriguing scientists such as Sir Isaac Newton. “Kandinsky used colour in a highly theoretical way associating tone with timbre (the sound’s character), hue with pitch, and saturation with the volume of sound. He even claimed that when he saw colour he heard music.

Now considered to be the founder of abstract art, his work was exhibited throughout Europe from 1903 onwards, and often caused controversy among the public, the art critics, and his contemporaries. He felt a special attraction to Wagner, whose music was greatly admired by the Symbolists for its idea of Gesamtkunstwerk that embraced word, music, and the visual arts and was best embodied in Wagner’s *The Ring of the Nibelung*, with its climax of global cataclysm. Among his musical contemporaries, Kandinsky admired the work of Aleksander Scriabin, whose innovations he found compatible with his own objectives in painting. What especially intrigued Kandinsky were Scriabin’s researches toward establishing a table of similarities between tones in colour and music, a theory that Scriabin effectively applied in his orchestral work *Prometheus: A Poem of Fire* (1908). These tonal theories parallel Kandinsky’s desire to find similarities between colours and feelings in painting: indeed, one of the illustrations included in the essay on Scriabin published in the *Blaue Reiter Almanac* was a colour reproduction of *Composition IV*.”¹²



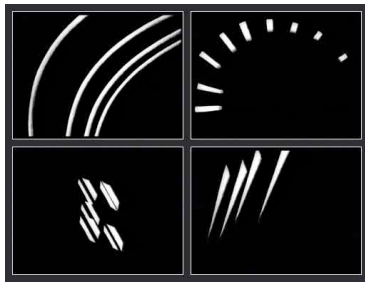
Scriabin’s system of “coloured hearing”

¹¹ Willard Huntington Wright: *The Future of Painting*

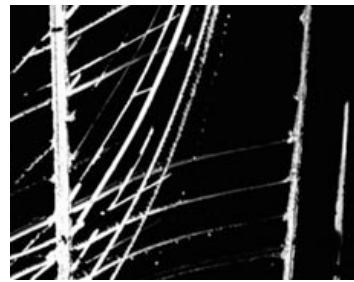
¹² Magdalena Dabrowski: *Kandinsky: Compositions*

It is quite easy to draw a connection between these early ideas and the contemporary clubscene, which combines music, lights, visuals and smoke.

These early investigations and experiments prove that even before the cinema was born, people were fascinated with the idea of audiovisual experience, without connecting it to narrative storytelling. Visual music is a well documented practice, which emerged side by side with color music. Many pioneering animators including Len Lye, Whitney Brothers and Oscar Fishinger created "music videos" and developed the aesthetics of abstract visuals already in the 30's.



Oscar Fishinger



Len Lye

While film projectors and cinema continued their victory, projecting colored light kept fascinating artists and inventors like Charles Dockum and Thomas Wilfred, who developed their lumia projections. Fred Collopy writes about lumia in his article¹³ in Leonardo magazine as follows:

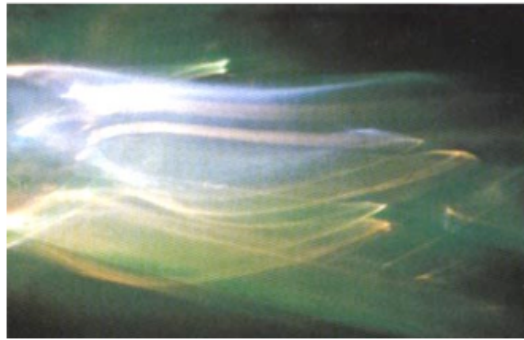
"Music has always had visual dimensions; the shape of instruments, the pattern of notes on the page, the movement of the players and listeners, album cover art, stage lighting, even music videos. But seeds of a new, more intimate relationship between hearing and seeing music have been sown over the past two centuries and are beginning to bear fruit. The resulting art has been called by a variety of names, including visual music, colour music, mobile color and absolute cinema. I prefer the name lumia. Lumia are pieces, like songs, created by visual artists. Some are essentially compositional in their structure, others include improvisational elements. Lumia are the result, in part, of the visual artist's fascination with the impact of music on listeners.... Lumia are an art form that share much in common with music. They are dynamic, based on essentially unlimited combinations of simple elements, are capable of expressing a broad range of human emotion and experience, and can be created in real time. With lumia, artists have begun to make paintings move like music, and even to link them with music. "¹⁴

¹³ Fred Collopy: Color, Form and Motion

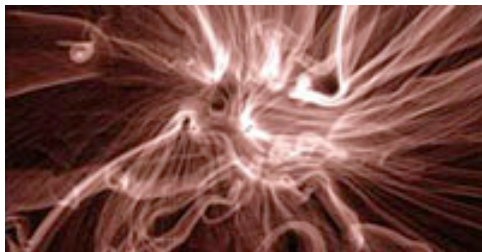
¹⁴ <http://RhythmicLight.com>



Thomas Wilfred: Clavilux



The idea of using the screen as canvas and colored light as paint is also very attractive to contemporary live visual artists. Gestures from the performer can be tracked with a camera so that their movements resample of physical act of painting. One of the contemporary “lumia” artists is Golan Levin, who in his thesis “Painterly Interfaces for Audiovisual Performance” gives an excellent overview of the history for visual-music systems, and presents his interfaces as follows:” ... a new computer interface metaphor for the real-time and simultaneous performance of dynamic imagery and sound. This metaphor is based on the idea of an inexhaustible, infinitely variable, time-based, audiovisual “substance” which can be gesturally created, deposited, manipulated and deleted in a free-form, non-diagrammatic image space.”



Golan Levin

The substance, Levin mentions in his thesis, has also been liquids, used with the overhead projectors, which became successful for the liquid projections also known as “wet shows” at the 60s hippy parties. The tradition of light shows as well as visual music and lumia live on today.

2.4. VIDEO ART / EXTENDED CINEMA

Early video artists continued the visual sound tradition by creating amazing effects with the video signal and the video synthesisers can be seen as the ancestors of realtime visual softwares. Video artists' experimentation in the early days was seen as a response to the domination of TV, and video effects were used as "empowering tools" to interfere with the TV signal. After the introduction of Portapak, the first affordable portable video cameras in 1967, artists could start to experiment with video independently and produce alternative programs.

"Extended cinema" movement, which started amongst video artists in the 60's, tried to expand or extend the 2-dimensional cinematic experience. "Many artists have been interested in extending cinema. Foremost is Jeffrey Shaw whose background in architecture and interest in film combine in his spatial installations. In the 60s he was interested in moving beyond a fixed and flat screen and breaking down the wall between what was projected and who was watching. In his piece *Movie Movie* he projected through a transparent inflated dome onto a white dome and encouraged the audience to enter the space and become part of the projected surfaces. He also produced legendary projected shows for rock concerts in the 70s. He continues to use projections and domes in his computer-based interactive work, and is known for technical innovation in this area, most recently *iCinema*. He has also worked with virtual reality, and in this context he moves beyond traditional interface devices such as joysticks or 3D mice. A major theme of his work is the urge to interpret different representations of reality spatially."¹⁵

Different effects like smoke, light bulbs, and multiple projections were used in order to effect the public's. Lucas Ihlein writes about this movement in his article "Pre-digital new media" as follows: "The Expanded Cinema artists saw themselves as restoring the dynamism and experimentation cinema had possessed prior to being standardised in a feature-length Narrative form. The experiments they carried out often involved fragile and ephemeral situations: light bulbs that flashed in front of the screen, puffs of smoke which illuminated the cone of light from the projector, and performances involving 'mini-cinemas' utilising the sense of touch rather than sight. Like other manifestations of performance art from the 1960s and 70s, some of these were so specific to time and place that it is impossible to experience them ever again."¹⁶

One of the expanded cinema artists Valie Export (*Expanded Cinema as Expanded Reality*) has written "It means multiple projections, mixed media, film projects, and action films,

¹⁵ http://www.ccr.buffalo.edu/anstey/TEACHING/intenv_F04/shaw.html

¹⁶ Ihlein, Lucas: *Pre-digital new media*

including the utopia of “pill” films and cloud films. “Expanded cinema” also refers to any attempts that activate, in addition to sight and hearing, the senses of smell, taste, and touch. Nicolaus Beaudin spoke in 1921 of a poly-level poetry which transmits the poetic synchronism of thoughts and sensations as a kind of film with images, smells, and sounds.” In the mid-1920s, Moholy-Nagy had suggested rippling screens in the form of landscapes of hills and valleys, movable projectors, apparatuses that made it possible “to project illuminated visions into the air, to simultaneously create light sculptures on fog or clouds of gas or on giant screens.”¹⁷

¹⁷ Export, Valie: Expanded Cinema as Expanded Reality

2.5. NON-NARRATIVE CINEMA

Non-narrative film makers' experiments are inspiring also for the contemporary live cinema practicants. The city symphonies in the beginning of 1920s explored rhythm in montage. "Berlin, symphony of a city", directed by Walter Ruttmann in 1927, depicts the daily life in the city from dusk until dawn. Ruttmann explains the film as follows:



Walter Ruttmann: Berlin, Symphony of a City

"During the many years of my movement studies drawn from abstract means, I have never been able to escape the urge to create from living materials, from the millions of movement-related energies that actually exist in the organism of the big city, a film symphony, writes Ruttmann. For this project, Ruttmann works together with scriptwriter Carl Mayer, whose shares his exasperation with the artificiality and limitations of studio work. Carl Mayer writes a film treatment aimed at achieving a symphonic film structure, excluding both actors and a story. It concentrates on what really exists, and on a form that uses the inherent means of film. (...) (Ruttmann) intends for the viewer to experience the energies, dynamics and movements of the big city, with original cinematographic means. For this end, the filmed shots function as the starting point for a montage whose rhythm hypnotises the viewer by conveying an experience in velocities, and also produces a new awareness regarding the objectivity of filmed shots."¹⁸

Other city symphonies include Dziga Vertov's "Man With a Movie Camera" (1929) and Cavalcanti's "Rien que les Heures" (1926), which was the first non-fiction film to use the wipe technique in place of cut or dissolve. The French avant-garde film makers such as Marcel Duchamp, Francis Picabia, Fernand Leger, Man Ray, Jean Cocteau, as well as other pioneers of non-narrative films like Hans Richter and Viking Eggeling experimented with abstraction, repetitive images, simultaneous experience and textures. Abel Gance was one

¹⁸ <http://www.medienkunstnetz.de/works/berlin/>

of the most inspiring cinematographic artists of his time. He is best known for his epic film “Napoleon” (1927) which is described as follows: “Gance climaxed his work in the silent era with Napoleon, an epic historical recreation of Napoleon Bonaparte’s early career during the French Revolution. A superspectacle, the film advanced the technique of cinematic language far beyond any single production of the decade. The definitive version originally ran over six hours in length, and its amazing innovations accomplished Gance’s intent of making the spectator part of the action. To create this effect, Gance utilizes rapid montage and the hand-held camera extensively. An example of his technique is the double tempête sequence in which shots of Bonaparte—on a small boat tossing in a stormy sea as huge waves splash across the screen—are intercut with a stormy session of the revolutionary Convention, at which the camera, attached to a pendulum, swings back and forth across the seething crowd. For the climax depicting Napoleon’s 1796 Italian campaign, Gance devised a special wide-screen process employing three screens and three projectors. He called his invention Polyvision, using the greatly expanded screen for both vast panoramas and parallel triptych images.”¹⁹



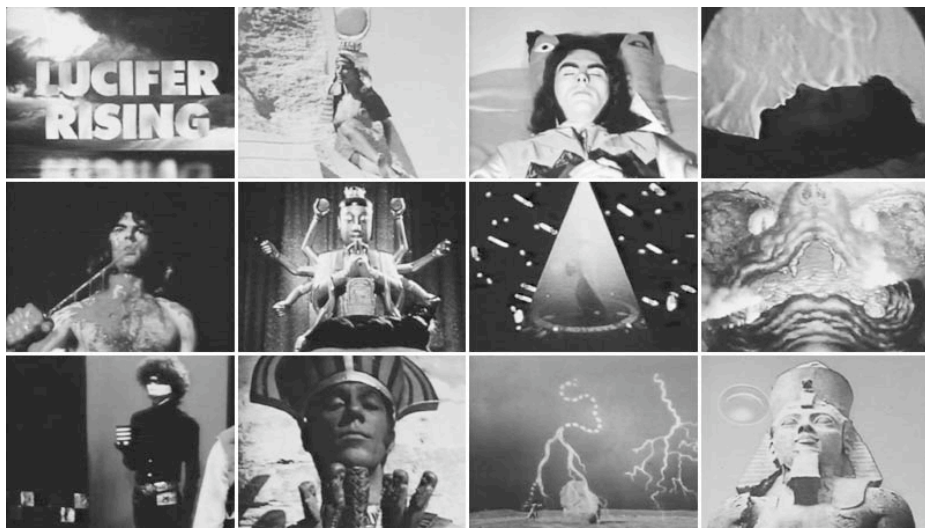
Abel Gance: Napoleon

Video and film artists of the 80’s and 90’s offer more recent examples of “an alternative use of cinematic grammar”. In his avantgarde masterpiece on magic and rituals “Lucifer Rising” (1980), the american film maker Kenneth Anger uses experimental editing techniques, which resemble Video Jockeying. Godfrey Reggio’s Quatsi trilogy (Koyaanisqatsi -Life out of balance (1983), Powaqatsi -Life in Transformation (1988) and Naqoyqatsi -Life as war (2002)) presents the world through visually powerfull rhythmic compositions, in which the music, composed by Philip Glass, stands on equal footing with the image. Reggio uses images from real life, and presents them in a non-verbal, non-linear fashion, which he calls “concert cinema”.

¹⁹ Drew, William M. : Abel Gance

I see live cinema as the continuation of these visual traditions, as image becomes the "message" borrowed from McLuhan²⁰, rather than a tool for narration. Music transmits to us feelings and sensations also without lyrics. Live cinema attempts to fulfill the same criteria, without dialogues. I believe that arousing emotions in the audience plays an important role in live cinema and could be one of the goals for a performance.

In the live cinema language section of this thesis I propose that the principles of musical composition can also serve for visual composition. I also reflect on the possible meanings of visual effects, which are so often the essence of live cinema performances.



Kenneth Anger: Lucifer Rising

²⁰ Herbert Marshall McLuhan (July 21, 1911 – December 31, 1980) was a Canadian educator, philosopher, and scholar, professor of English literature, literary critic, and communications theorist, who is one of the founders of the study of media ecology and is today an honorary guru among technophiles. "Media is the message" was his famous quote.

3. ELEMENTS OF LIVE CINEMA

What is live cinema ? According to the Transmediale Press release for its live cinema program in 2005 the term “Live Cinema“ has hitherto been used primarily to describe the live musical accompaniment of silent movies. But that was yesterday. “Live Cinema“ today stands for the simultaneous creation of sound and image in real time by sonic and visual artists who collaborate on equal terms and with elaborate concepts. The traditional parameters of Narrative cinema are expanded by a much broader conception of cinematographic space, the focus of which is no longer the photographic construction of reality as seen by the camera’s eye, or linear forms of narration. The term “Cinema” is now to be understood as embracing all forms of configuring moving images, beginning with the animation of painted or synthetic images.²¹

Narrative cinema contains syntax and grammar. It is in short: a language in which a story is told. This language is based on montage, a linear editing of shots in order to create continuity based on narration. Sound is used to “glue” the pieces together and create the atmosphere. There are various widely accepted rules for shooting each scene in order to maintain continuity. One of them is the 180 degree axis. Crossing it can be very confusing since the direction established for the viewer changes. An example of this would be like watching a football game with the runner going to the right and all of a sudden we cut to him running to the left. It would make the viewer wonder if he was running the wrong way or not.²² One of the important elements of cinema is thus continuity, which is created following certain established rules of cinematic grammar.

The difference between cinema and live cinema lies in its context and goals. Live cinema is not cinema. Live cinema is not linear story telling. It is not based on actors or verbal dialogues. Live situation imposes its necessities but also claims freedom from the linear structure of cinema. As cinema is ostensibly trying to tell a story, shots where nothing is happening, even if visually powerful, tend to serve as transitions. The shots containing action and dialogue constitute the key moments of the movie. Repetitions are not commonly used, nor visual effects that would alter the visual information. Slow motion may be the most common effect used in cinema apart from the 3D effects. Nevertheless, many movies are famous for their atmosphere, enhanced by scenes which do not contain action or dialogues.

²¹<http://www.transmediale.de>

²²<http://www.solutioneers.net/cinema/axis.htm>

One example is “Lost Highway” (1997) directed by David Lynch, which is remembered for its long shot of a dark highway. I believe these kind of shots are the basic material for live cinema performances: the transitions, the movements, the pure visual beauty and intrigue, the atmosphere.



David Lynch: Lost Highway

LIVE CINEMA describes work in which is in essence artistic, to make a separation from VJing, which is basically visual DJing. DJs don't produce their own material, they mix music, the same way as VJs mix already existing material. This does not mean that VJs would not also create their video-clips, but there are many who consider that producing material it not necessary for a VJ, who mainly presents the contemporary visual currents of our culture. There also exists a market for selling and buying video-clips. This means that many VJs can use the same clips. In these cases, content is not as important as its usability in a mix. The act of mixing and selecting becomes the work of a VJ. DJ's do the same, they choose certain type of music and samples, beat and style, like techno, house or drum'n'bass.

Live cinema creators' goals appear to be more personal and artistic than VJs. It is difficult to define what live cinema is as there are so many different styles and contents, but apart from the actual content of the visual material there are certain issues or elements that seem essential for all live cinema performances (as well as for VJing).

In search of a trajectory I started defining live cinema by its components: What is needed in order to perform visuals in realtime? One component is **projection**. It would be difficult to imagine a live cinema performance without it. The second is **performer/creator** as there would not be anything to show in realtime without the artist. Third one is the **public**, as if no one is watching, why perform? And the fourth one is the **space** shared with the audience and the performer projecting images. Realtime performance is also a **time**-based live event.

I decided to focus on these five essential elements: space, time, projection, performance and public (participation). I could have added more elements on the list like Music, Tools and Media. Music is such a large subject of study, that in the frame of master thesis I considered it best to leave it for further studies, even though live cinema performances are essentially audiovisual performances. Also, my practice and main interest is in creating visuals, so I collaborate with musicians in the performances. The process of creating an audiovisual performance together with a musician is already worthy of a thesis on its own.

As softwares and audiovisual equipment seem to be the main topic of discussion in the VJ circles, I found it unnecessary to profoundly reflect on these tools as they are well covered on mailing lists and online VJ-portals. Some festivals are organised on the software basis like an event titled: puredata audiovisual performances. Even though using free software²³ such as Puredata²⁴ in one's performance can have social importance, it's probably not that interesting for the audience. On the other hand, the tool HAS importance in the realtime sphere, perhaps because it seems that the ideal tool does not exist yet. That could also be the reason also for the frenetic development in the software frontier, resulting in more options for the artists. The tools CAN mark a performance, as each software has its style. This is an important issue content wise rather than tool wise. I don't consider it of primary relevance in traditional video editing as it is impossible to say if a video is edited with Final Cut Pro or with Premiere. However, in realtime audiovisual performance it is quite easy to distinguish if someone is using MAX/MSP/JITTER²⁵ or Arkaos²⁶. The difference is shown in the amount of options each tool offers. Nevertheless, tools become obsolete, while new ones are perpetually born, but the elements of the performance can remain the same.

Another important element I do not discuss in minute detail, is Media i.e actual visual material. Most artists use video clips, flash and 3D animations, even though generating abstract visuals with softwares is growing ever more popular. Some artists use game engines to create visuals (JODI) and some use online resources (WJs=webjockeys). Even the Google Earth webservice can serve as material for a live show (Satellite Jockey). Also live cameras are used for projections (for example, Sue.C). Basically the number of live visual genres is growing so rapidly that it would be difficult to present them all.

²³ In the truly *free* software world this term represents software that comes with the freedoms to use, copy, study, modify and redistribute both modified and unmodified copies of software programs.

²⁴ PD (aka Pure Data) is a real-time graphical programming environment for audio, video, and graphical processing. It is the third major branch of the family of patcher programming languages known as Max (Max/MSP, JMax, etc.) originally developed by Miller Puckette and company at IRCAM. The core of Pd is written and maintained by Miller Puckette and includes the work of many developers, making the whole package very much a community effort.

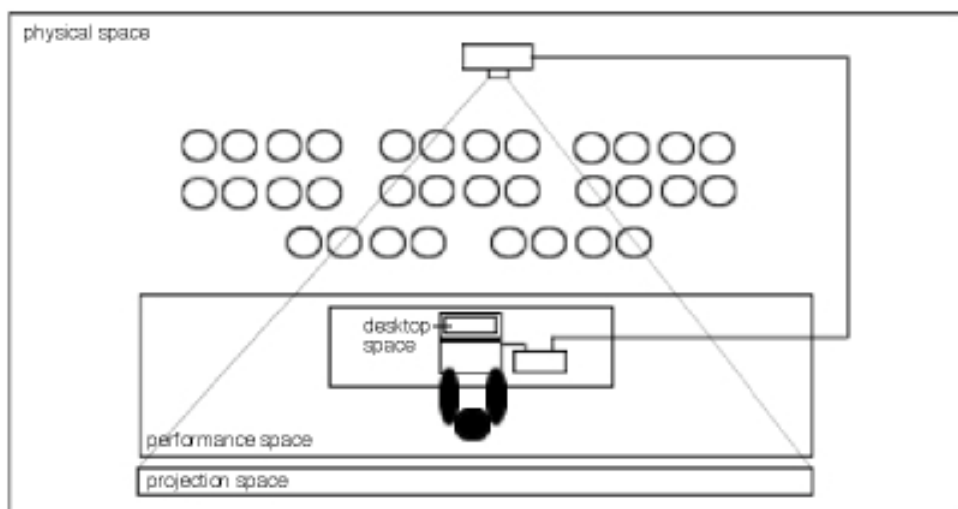
²⁵ Max/MSP/JITTER is object-oriented programming environment for music, audio, and multimedia.

²⁶ Arkaos VMP and the more professional MIDI & digital video capable VJ version are multimedia authoring and editing tools suited towards live performance.

3.1. SPACE

Live cinema performances occur in a space shared by the performers, their tools, projections and the public. The space in live cinema is more flexible and active concept as in cinema, where the spectators are supposed to silently watch the movie, without any external disturbances. In many live cinema performances, the audience can be sitting, walking around, dancing or participating.

A performer covers various spaces simultaneously during her performance. I have divided these spaces into 5 different types according to their characteristics: digital, desktop, performance, projection and physical space. The set-ups of performances vary greatly, so it is difficult to define all the possibilities. The image below describes the most typical, though not the most imaginative option.



3.1.1. Digital space

Every time we save a file on a hard disk or upload it on a web sever, we are working in digital space. When we write an email or retouch a digital photo, we are working in digital space. More and more our activities, including communication, production, exchange, creation, investigation and distribution take place in digital space: Thus, the characteristics of digital space shape our ways of working and even thinking. We do not fill our physical space with so much furniture that we can not move around. The digital space on our computer's hard disk is maintained in the same way; we leave enough free space for our activities. In order to organise digital space, we try to pack our files as small as possible, for the following reasons:

- a) to save space (not to fill the computer's hard disk)
- b) to save time (not to wait for unnecessary rendering / processing time)
- c) to achieve the optimum speed for performing

Optimizing and compressing are two essential activities in digital space. They are specially relevant for live cinema artists who work with video material, as uncompressed digital video occupies huge blocks of digital space. One minute of full quality video can take up over one Gigabyte of digital space. Also processing "heavy" videos in realtime would demand a lot of RAM (Rapid Access Memory) and a very fast processor.(cpu=central processing unit)²⁷. Without compression techniques it would be practically impossible to work with video on a normal computer (without external digital storage space). Nor would it be possible to watch videos online or on DVDs.

Ron Burnett has written about the era of compression in his book "How Images Think", as follows:

"What do compression technologies do to conventional notions of information and image? This is a fascinating issue, since compression is actually about the reduction of information and the removal through an algorithmic process of those elements of an image that are deemed to be less important than others. The more compressed, the more that is missing, as

²⁷ The most important components for realtime processing are the cpu (central processing unit), RAM (rapid access memory) and video card. These three together define the capacity for performing live visuals on the laptop and thus the necessity for compression.

data is eliminated or colours removed. The reduction is invisible to the human eye, but tell that to the image-creator who has worked hard to place "content " in a particular way in a series of images and for whom every aesthetic change is potentially a transformation of the original intent."

In the compression process image data like resolution (pixels per inch), framerate and colour palette is reduced. This reduction results in a smaller file size which is not only for storage, but also accelerates the rate of realtime processing (effects, calculations) of the video material. In live cinema performances, the video material is not just played but is also processed in realtime, requiring the highest performance from the laptop.

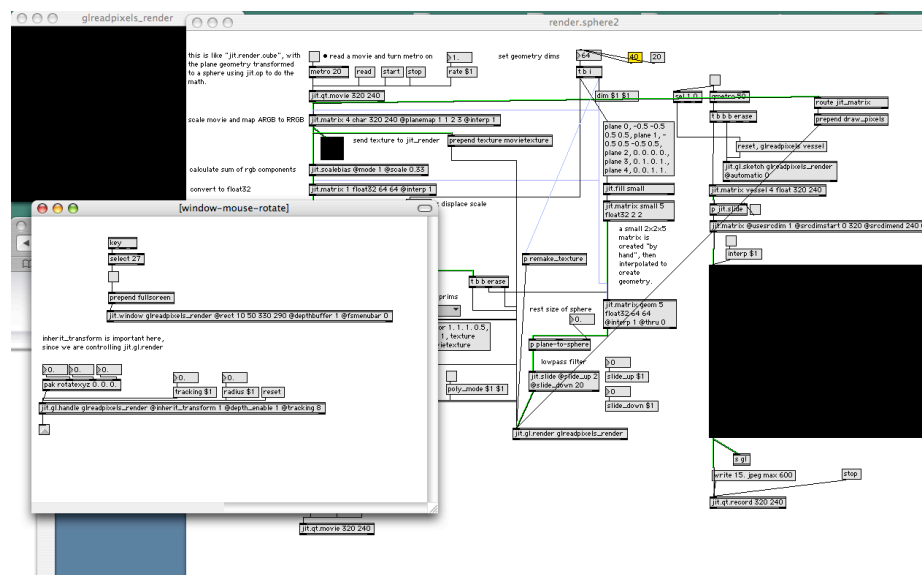
Successful compression is the key to successful performance. There are various different codecs (methods of compression) including photojpeg, cinepak, sorenson and animation. All of them have qualities which work better for different kinds of video material. Photojpeg is one of the most commonly used as it does not remove frames of the video clip, which is an important issue for work like video scratching²⁸. Animation works well with graphical material, as the colours keep firm boundaries, i.e: Black is black and white is white, without any blurriness between them. Each realtime video software has its own preferences of codecs, for example Isadora is optimized for photojpeg.

During the past few years, laptops have increased processing power. This allows better video quality, i.e the videos edited or processed can be bigger in size, (in pixels and in MBs). Nevertheless, live cinema creators are constantly testing the limits of their laptops. A similar thing occurred in the 90s, during the multimedia hype: The creators of CD-ROM projects included video and audio to the limited digital space of 256 MB, which meant spending long periods optimising the material not to mention the time spent rendering animations. Nowadays DVDs with their 4.7 GB (actually 4.4) offer more than enough digital space for even the most ambitious multimedia production, nevertheless they are used mainly for distributing full feature films or video art, which again demands even more effective compression methods like Mpeg2 and DivX. It seems that we are always trying to exceed the limitations of the processing power and digital space available. This also occurs with the bandwidth. Although the bandwidth has steadily grown into Megabytes of speed, still it seems very limited for watching videos online or for video streams, as the material has to be so compressed that the outcome can become a "pixel porridge". Understanding how digital video works is the basis for live cinema artists.

²⁸ Scratching is a term known to DJs. It describes the technique of moving the vinyl back and forth while its playing. The same technique can be also used by VJs.

2.1.2. Desktop space

Desktop space is the work space for laptop performance artists, as it is the platform for the interface of the software. For softwares which contain so-called “open architecture”, like MAX/MSP/JITTER, Puredata or Isadora, desktop space is essential. In these cases the artist creates the interface or patch, as it is called, by choosing so called objects from the object library, connecting them to each other with cords and adding different parameters (controls) to the objects. The metaphor for these kind of interfaces is the video signal (cord), which goes through all the objects in the patch. If the continuity of the signal is cut, there is no video output. As these programs are based on C programming language, the video signal cord symbolises the continuity of the code behind it. Thus, if there is one error in the code, the patch will not work properly.



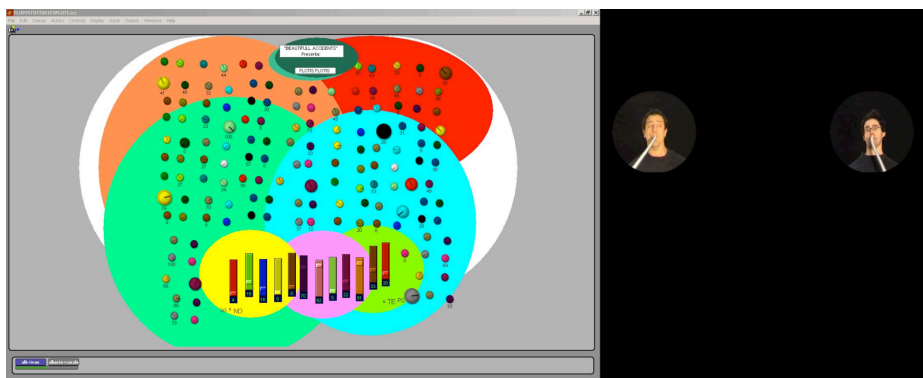
MAX/MSP/JITTER patch

The interface can occupy more space than is available on the desktop. This is already taken into account in the design of these softwares, as there are several options available to “compress” the patch using subpatches. Furthermore, other methods lie at the artists disposal, like changing the size of the objects (Isadora). Therefore, desktop space becomes a multiple space where the invisible and visible can be continuously altered depending on the needs of the performer.

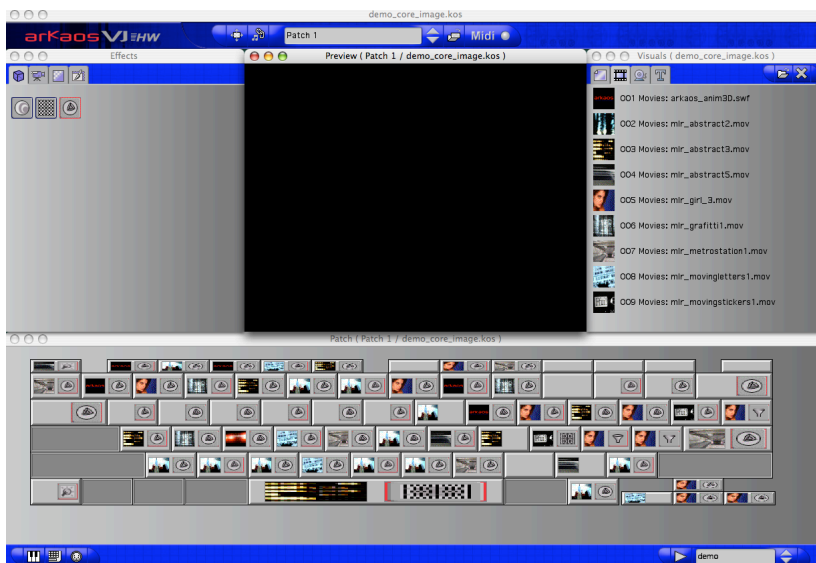
The design of the interface / patch should be optimised for an intuitive and fast way of working. During the performance there is no time to search for missing objects so the interface should be constructed in such a way that the most important controls are visible all the time while the less used controls can be activated when they are needed. The basic rules

for interface design can be applied: The optimizing of the interface can be designed using colors, different sizes, effects and texts, which function as comments to remind the performer of things s/he might forget otherwise. The interface design should also take into account that the processing power of the computer should be used for the most important thing during the performance, which is realtime processing of the video material shown in the projection.

Personalising the interface is one of the most interesting qualities of the open architecture softwares. Creativity can be applied not just for the output but also the process. Each performance is different and the interface can also vary. This can also create a sense of more freedom for imagination as to what can be done, as it becomes possible to start the design from zero. Basic softwares like Arkaos, which offers an interface in which videoclips and effects can be activated with keys on the keyboard. This could catalyse a visual show where different clips can be changed rapidly and even randomly, optimizing the difficulty of remembering which key connects to which videoclips.



Alberto Pi's customised interface for Flotis Flotis installation created with Isadora



Interface of Arkaos VJ software

The laptop performer constantly follows two spaces: the projection space (output) and the desktop space (interface). The interface is normally not shown to the public. Thus it is necessary to have a laptop which has two monitors instead of duplicating the monitor (iBook)²⁹. Sometimes the performer is located in such a way that she can not see the projection space. In this case, the monitors in the interface or external monitors give her only view of the performance.

3.1.3. Performance space

The performance space is where the performance takes place. Everything that is included in the performance in one way or another belongs to the performance space. This varies according to the performance. The most basic setup for live cinema is a stage where the performer works with her laptop and other equipment, while the projection screen is located behind. In this case the stage is the performance space. Live cinema artists can also work with dancers which means that there are more performers and the combined space of action becomes the performance space.

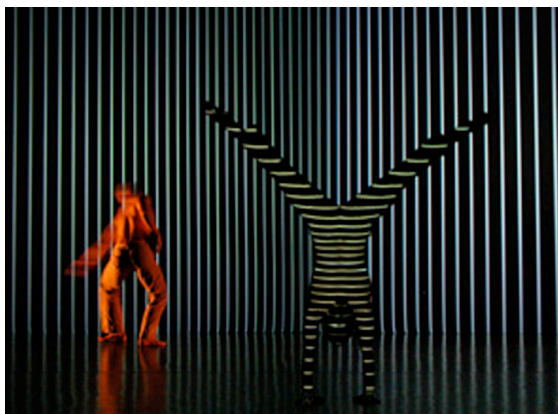
At the Cimatics festival in Brussels 2003 the performance space was set up under huge panoramic screens. In order to make the shift from one artist to another fast, all artists had their setup next to each other on a long table, around 10 meters long. Huge piles of equipment, DVD-players, videomixers, cameras, laptops and midi controllers were laid on top of the table making the visual contact with the audience almost impossible. This was quite symbolic for live cinema performances in general, as our tools can absorb our attention so completely that our connection with the audience is easily forgotten. The live cinema performer can become like a film projectionist, who takes care of the performance out of the public's sight. This is normally the case for club VJs who perform in a hidden place, while the DJ spins the records on the stage.

²⁹ This problem can be sorted out with firmware

3.1.4. Projection space

The projection space is the space filled with the projections.

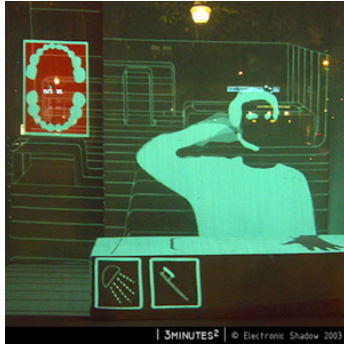
Many live cinema performances are presented in a cinematic 2-dimensional setup, where one or several rectangular screens are facing the public. There are other possibilities as the projection surface does not have to be a flat surface. It can be also a human body as the following example demonstrates. “Apparition”³⁰ (2004) was a performance produced at the Ars Electronica Future Lab by Klaus Obermaier and his collaborators. In this performance the minimal visuals were projected onto the bodies of the dancers and onto a large-scale background. The camera-based motion tracking system tracked the outlines of the dancers, which allowed their movements to affect the speed, direction and volume of the visuals. The simultaneous effect of the two projection surfaces resulted as a powerful visual experience.



Klaus Obermaier: Apparition

Electronic Shadow, a Paris based group, has produced site-specific installations. In Ars Electronica 2004, they showed “3 minutes²” in which the projection surfaces were horizontal and vertical. The 2D images were prepared in such a way that they fitted the 3 dimensional surfaces in the physical space perfectly, thus producing an illusion of 3-dimensional space.

³⁰ http://www.aec.at/en/archiv_files/20041/FE_2004_obermaier_en.pdf



Electronic Shadow: 3 minutes

The project is explained on their website as follows:

"3 minutes²" (2004) is an installation mixing space and image, real and virtual and proposes a hybrid habitat metamorphosing endlessly around it is inhabitant. No screens, no visible interfaces, the two characters touch the walls, make movements, the habitation responds to them. The technology has become totally invisible and the effect of technologic becomes then magic. ..Parallel realities melt in one space-time, 3minutes are a space, 10 square meters are a space. 3 minutes² is a surface-time, a hybrid space living according to it is inhabitant's rhythm, his trace, his electronic shadow."

As these examples show, projections can be adjusted to specific spaces, but they can also create illusions of a new space. At Mapping festival in Geneva (2004), the organisers filled a club space with monitors and transparent screens. When the visuals were projected on the transparent screens, the repetition of the image created a 3-dimensional effect which transformed the space into a visual environment. The audience was free to move among the projections, and thus also became projection surfaces. This was very inspiring for both for the audience and the performers. It was interesting for the performers to try to find images that would strengthen the spatial effect: In this case images on top of a black background worked well, as the borders of the image were invisible. We are so used to seeing images inside a rectangular frame, in painting, photography, TV and cinema, that experiencing visuals without the usual borders can be a refreshing experience. This is how we also normally experience the world, without the "camera eye", and without borders.



Mapping festival 2004

Cinema remains a flat-screen based medium, while live cinema and installation artists are exploring the possibilities of expanding the screen and changing our audiovisual experiences into spatial experiences in audiovisual environment.

3.1.5. Physical space

Physical space is the space shared between the audience and the performer. All the other spaces of live cinema lie inside the physical space. The physical space defines the setup of the performance. The space can have arcs or other architectural elements which can limit the visibility of the projections for the audience. It is also important to explore the physical space before mounting projectors, as bigger projections require more distance from the screen. For example it is difficult to project a huge image on the floor if the physical space is not high enough. Mirrors are often used to redirect the projections. Care must also be taken to ensure that projectors are located in such a way that the audience does not get in the way of the beam.

In site-specific projections the physical space is the starting point for planning the performance. A projection can be beamed on a corner or all around the space and the images can be planned in such a way that they transform the space, or give the illusion of a new space. Projecting spatial 3D images onto the physical space, for example, can result in the illusion that the space continues in the projection. The visuals can also be projected also onto smoke in which case the projection surface is spatial. The lightbeams of the projector behave like lasers, each pixel presenting one beam. This gives the illusion that the audience can literally touch the projection, as it can be turned towards the viewers.

3.2 TIME

3.2.1. Live versus real time

As the title already suggests, the difference between cinema and live cinema is that in the latter something is done live, in front of an audience (online or offline). What qualities does live give to cinema? If we think of the value of music played live in concerts we imagine the excitement of seeing the musician and sharing heightened emotional states with the fellow fans. Also, outside of a studio environment the skills of the musician are tested, as there is no producer making the guitar sound better. Normally, the possible errors committed are compensated by the live performance elements and the spectacle.

In live cinema performances these qualities are also inherent. Seeing the creator presenting his or her work is different to watching a movie: There is a possibility of instant feedback both ways. If the viewer gets bored she can leave, and that can affect also the performer, or the viewer can applaud and make the performer feel better about her work. Furthermore, the audience can discuss the performance with the artist afterwards. The live context enforces also the possibilities of participation of the audience. As Daniel Palmer points out: "Since the 1960's video artists have explored various possibilities of live mediation, with an initial focus on the image and its relation to the spectator." Many video installations are based on the viewer, like in Dan Graham's installation : present Continuous past(s) in which the camera captures the viewer in a space filled with mirrors and projects the image with 8 seconds of delay, so that the viewer can see their past while she is being captured for the future, thus creating thus an endless time continuum.

Another important issue of live situation is its unique nature. Most performances are not documented. They become moments shared between the artist and the audience, unique and difficult to repeat. Alan Kaprov started organizing happenings in 1957, which presented experiences that differed from the usual art context, especially in the emotional sense. At times, the results proved to be too uncomfortable for the audience, who left infuriated. The ephemeric uncommercial nature of happenings did not easily adapt to the "exploitation" of the art system as there was no product to sell. Indeed, Kaprov readily admitted that they were not art at all. Once artists started to document their performances with film and video cameras, the nature of "happenings" changed, and especially the defenders of "pure performance" made a stance. They felt that leaving traces of the performance like tapes, destroyed the concept of uniqueness of the moment. Kaprov eventually dropped the term

happenings and started to organize events.³¹

Live situation also calls for improvisation. As jazz musicians can jam together for hours, on improvisational basis, a similar kind of jamming can happen also between live cinema artists and musicians, allowing intuition and collaboration to take precedence over following a certain plan. This is an interesting challenge, as communication between the performers becomes literally audible and visible to the audience. Musicians and visualists can improvise on what they see and hear. This is actually easier to say than to do. In most audiovisual performances, it seems that the visual artist is improvising to the music already composed by the musician. VJs or visual performers often attempt to make the visuals react to the music on rhythmic basis, rather than constructing audiovisual performances where the image and the audio are in constant dialogue. This is also reflected in the design of the realtime video softwares, which enable the visuals to be synched to the beat, thus creating the illusion of communication between music and visuals. On the other hand, more often than not, the visual artist or VJ does not have prior knowledge of the type of music that will be played, and is left with only one option: Improvisation. It is also often the case that the DJ does not pay too much attention to the images created to his mix.

The wide variety of instruments available makes live performance natural for musicians. What could constitute the equivalent instruments for visuals? Computers have allowed visual artists to treat image in a way, which has not previously been possible. Manipulation and processing of image as if it were sound, in order to perform visuals on a more profound level, has been the goal of many software creators. Rene Beekman claimed at the symposium “That Media Thing”, in 1999: “Interestingly and strikingly enough, almost all efforts toward developing new computer software which could enable new ways of processing video almost all stem from the field of music.”³²

It seems that visual performance is following the ways of musical performance. There have been various attempts to build instruments which would allow visuals to be played while the performer moves her body. On the other hand, if visuals are played with instruments similar to a guitar, or a piano, what does it tell us of the true nature of the image ? How should VISUALS best be played? What constitutes playing visuals ? A guitar cord makes a certain kind of sound. What visual instruments could create different kind of images, depending on the way they are played?

³¹ Baigorri, Laura: VIDEO: PRIMERA ETAPA

³² René Beekman : Composing Images

When we see "Live from New York" flashing on the TV screen, we know that the image is "real", this is what is really happening. Normally the effect of "realness" or "liveness" is enforced by certain "reality effects", like a hand-held camera or even technical problems which makes us recognize the output as more "real" than the carefully chosen, edited and manipulated image material normally transmitted. Does live equal real life ? In real life, technical problems can occur, and as such, in performance, weather conditions and human factors like nerves can hamper the smooth outcome of the performance. I have seen examples of such hazards and their effects: I have performed outdoors in strong winds that blew the screens apart. On another occasion, the monitor broke down in the middle of the performance, which made seeing what I was doing quite impossible; still the show "had to go on". Anything can happen in a live situation and that is what keeps it interesting. Live is connected to real life, it is something happening in front of us in natural time.

Daniel Palmer offers 4 categories for realtime in his thesis titled "Participatory media: Real-time news, Reality entertainment (reality TV, big brother), Computer games and Media art". Palmer defines realtime as the following, "a real time image is an image that is produced and received simultaneously". Computer-based work is already a realtime environment, for example, the movement of the mouse is rendered as the movement of the cursor without delay and received immediately. Computer games function on the same basis. In first person shooter games, the polygons are rendered so fast that the moving in the virtual space seems to happen without any delay. However, in the live cinema context there are different levels of realtime though. Mixing videoclips can happen in realtime, as the performer makes simultaneous choices. The visuals can also be generated in realtime, in which case the algorithms of the program are changed. A further example is the image created by live camera, which can be modified using realtime video effects in which case the production processing and the output reception are simultaneous.

3.2.2. Loop

The production of electronic music is based on samples, and their repetitions and variations. Similarly, video clips (or algorithmic programs) are the basic elements of realtime visual performance. In cinema, different shots are edited together linearly, and each of them appears only once during the movie. I use the term “**presentation time**” to describe the time a visual element is visible to the public. In cinema, the duration of the shots equals their presentation time. In live cinema the presentation time can be longer than the actual duration of the clip. This is caused by various repetitions of the same visual sequence during the performance. This means that even if a clip lasts 10 seconds, it can be presented in a loop for a minute or longer. The clip can be also presented various times during the performance. In a “cinematic” loop, the beginning and the end of the clip is different which appears evident to the audience. Seeing the same loop over and over again could become tiring after several repetitions. Sometimes this can add extra value to the performance, like repeating a movement which becomes funny in the long run. In this case, the careful selection of the loops and their montage are the basis of the work and video scratchers like London-based Hexstatic, Cold Cut or Exceeda have done excellent performances using this method. In these cases, the interaction with music is crucial for the success of the show, and the three groups mentioned are all audiovisual groups who synchronize music to fit their images perfectly.

Another type of loop is what I call an “**endless loop**”. In this kind of loop the beginning and the end are so similar that the clip seems to continue without a cut even though it is looping. One example is a landscape where nothing seems to happen, until someone appears in the scenery and then leaves the image. The cut is done when the person has left the image, thus the beginning and the end show the same landscape and continuity of the loop appears seamless. When the loop is played again, the audience sees a person appearing again, but they can not be immediately sure if it is the same sequence or not. With many repetitions, the exact duration of the loop can also become obvious, but until that point, the loop’s presentation time has exceeded its actual duration.

The endless loop seems to offer more presentation time in the performance. So why is presentation time so important? Realtime performances are based on looping material rather than editing material. Realtime softwares automatically loop all clips until told otherwise. Let us imagine a performance which lasts one hour, where the artist has a library of videoclips each lasting 15 seconds. If each clip were shown only once, the artist would need 240 clips, which is quite a lot to handle during the performance.

Polish film maker and animator Zbigniew Rybczynski has experimented with effects in his films, and these are connected to realtime performance, such as loop and split image. He has also used visual material which could be considered typical for realtime performances. In his Oscar winning video “Tango” (1982), he used video loops of people doing different things in a room, all cut off from the background. The loops kept multiplying and forming different layers, and were mixed so skillfully that they didn’t interfere with each other. As Lev Manovich has written : “Rybczynski arranges the trajectory of each character through space as loop. These loops are further composited, resulting in a complex and intricate time-based structure. At the same time, the overall “shape” of this structure is governed by a number of narratives... The metaphor for the progression of a human life is also supported by another narrative: the first character to appear in the room is a young boy; the last, an old woman.”³³



Zbigniew Rybczynski: Tango

There are various methods which help in creating an endless loop:

Movement > continuity:

Movement creates the illusion of continuity. One example could be a camera shooting landscapes through the window of a train. The faster the motion, the easier it is to make the movement look seamless as long as the beginning and the end of the loop have similar forms and colors. Another example of movement is shooting with a camera while walking ahead. This movement, which in itself is not smooth, moreover quite jumpy, helps to make the cut invisible. Although the beginning and the end are little bit different, the continuity of “jumpiness” makes it look like part of the journey. One of the easiest ways of making an endless loop is to make the same loop run once directly and then in reverse.

Still camera with moving object:

Another method is to use an object, for example: A person moving in front of a camera placed on a tripod, so that the movement starts outside of the frame and ends outside of the frame.

³³ Lev Manovich: The Language of New Media

This immediately creates a seamless cut. Shooting an abstract theme, like a light randomly switching on and off easily makes the loop endless. The more random the change the more presentation time the loop seems to have.

These examples of creating an endless loop, can be useful tools in performance as they seem to have more presentation time than a normal loop. The management of time is one of the essential issues of realtime performance and it is approached from a different angle than in linear audiovisual production, in which clips are played one after another and showed only one time each.

3.3. PROJECTION

Painting, photography, cinema and TV are traditionally presented inside of a rectangular frame. Although nowadays paintings have started to adapt to different forms, the technical formats of visual production continue to be rectangular. The camera eye sees everything inside of a frame, which leads to rectangular visual presentations. For the spectator, TV is the small-scale-version of cinema, without the immersive effect produced by the dark space and surround sound-system of the movie theatre.

3.3.1. Spatial Projections

In live cinema performances, cinematic set-up is common, although there are many other ways in which to use projections. Unlike cinema, live cinema incorporates the setting up of projections as part of the creative process. The extended cinema artists, as well as contemporary installation artists, have done plenty of experimentation with projections. One of the goals has been to leave the flat screen and create spatial experiences. Various artists have already discovered smoke as a spatial projection surface. A Canadian video artist, Rebecca Belmore's new video work, *Fountain*, exhibited in Venice Biennale 2005, was projected on falling water. In this case the sound of the water transformed it into an audiovisual screen. Many artists and VJs also used different shapes like balls as a projection surface and transparent screens which create 3-dimensional effects.



Jeffrey Shaw : Place - a user's manual

Jeffrey Shaw, one of the most famous media artists of our time has explored the possibilities of panoramic and surround projections. One example is "Place – a User's Manual" (1995), in

which the image moves on the 360-degree purpose-built cinematic environment. The installation has a large cylindrical projection screen with a round motorized platform in its centre, a computer and three video projectors that project onto a 120-degree portion of the screen. Continuous rotation of this viewing window around the screen reveals the full 360-degree computer-generated scene. While the work is controlled and generally viewed from within the circumference of the screen, the projected image can also be seen on its external surface.

The user interface in this work is a modified video camera. By rotating this camera and using its zoom and play buttons, the viewer controls his forward, backward and rotational movements through the virtual scene as well as the rotation of the platform and of the projected image around the circular screen.³⁴

In this case the user is still watching a rectangular image, even though she can control its size and movement.

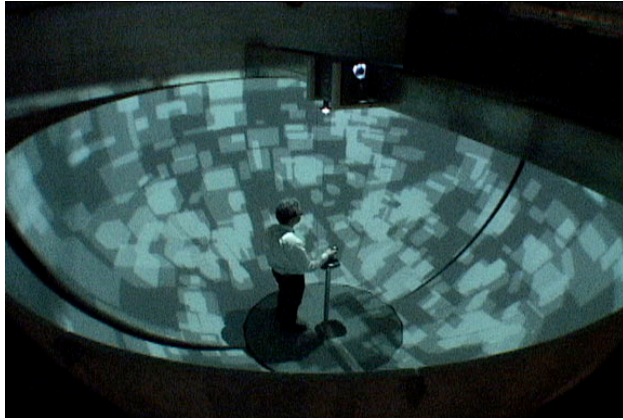
Luc Courchesne from Montreal is another artist whose works comprise immersive interactive spaces, one of them is *Landscape 1*³⁵ (1997). He used four cameras to shoot simultaneously in four directions from the same view point. The installation was set-up the same way as it was shot, using four screens, each showing the image of one camera. This created a space where the user was truly surrounded by the visuals, resembling our natural vision of the world.



Luc Courchesne : Landscape 1

³⁴ http://www.jeffrey-shaw.net/html_main/frameset-works.php3

³⁵ <http://www.din.umontreal.ca/courchesne/land.html>



Luc Courchesne : Where are you ?

Courchesne has recently gone further in his studies of spatial projection and with his team, he has developed a project called “Where are you?”, a single channel immersive display for real-time 3D, with a 360° panoscope. For this, a special inverted cone is used to strengthen the immersion of the visitor. A joystick is used to control the movement of the visuals in the environment. One 360° projector is enough to fill the space with projections. This kind of installation needs a special environment, which could make it difficult to set up in other places. It might remain a speciality, resembling a small-scale planetarium. Or it might function as a prototype for a larger space, such as a club.

3.3.2. Media Facades

A projector is not the only possibility with which to show visuals. Computers can be directly connected to LED screens which are more powerful light sources than projectors. Media installation SPOTS converted an office block located at downtown Potsdamer Platz Berlin into one of world’s largest media facades in 2005. Commissioned by the agency »Café Palermo Pubblicità«, this large scale matrix made up of 1800 conventional fluorescent lights was designed by the architect/ artist office realities:united, Berlin.

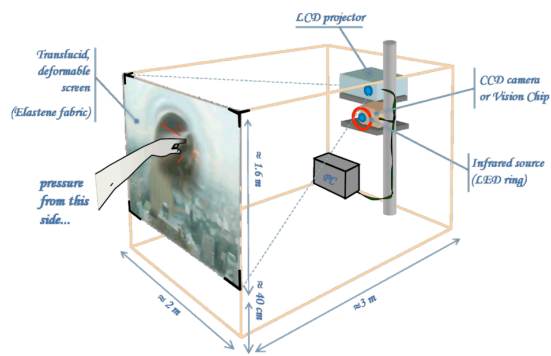


Spots media facade

Another example of a large scale media facades is located in Melbourne's Federation Square, created by Greg Giannis. *Facade* (2004), is an interactive artwork that allows participants to transform the appearance of the facade. Using a simple java interface, participants are able to create individual designs which will be projected onto the facade itself, effectively allowing the wall to be 'painted'.³⁶ This strategy allows a participant anywhere in the world with access to the internet to determine what will be projected. Interactive media facades are interesting also from an architectural point of view, as projection surfaces could be implemented in the design of houses. Facades can also be reactive. i.e. the external input like weather, pollution, noise or movements of people could determine the content of the visuals.

The projection can also function as an interface like in the case of Alvaro Cassinelli's *Khronos* projector, described as a video time-warping machine with a tangible deformable screen. It explores time-lapse photography. The audience can interact with the image by touching the tangible screen and therefore, effectively go back and forth in time.

³⁶ <http://www.facade.net.au/page1.html>



Alvaro Cassinelli: Khronos projector

As these examples show, projection is a flexible concept. We can understand projection as an interface, as in the case of the Khronos Projector. Projection can also be an environment, like in “Where are you ?” Projection as an interface gives the performer more physical freedom, which means that the act of performing has realtime correspondence with the results of these actions, all of which are visible to the audience. These kinds of projects give an idea as to what projections might become in the near future, and how they could change the concept of performing visuals in realtime. One prognosis is that the projected image could turn out to be the best visual instrument for realtime performance, as also the performer’s body would also become an integrated part of the live show.

3.4. PERFORMANCE

3.4.1. The role of laptop performer

What is the role of the performer in live cinema ? In the Wikipedia, performance art is defined as “art in which the actions of an individual or a group at a particular place and in a particular time constitute the work. It can happen anywhere, at any time, or for any length of time. Performance art can be any situation that involves four basic elements: time, space, the performer’s body and a relationship between performer and audience. It is opposed to painting or sculpture, for example, where an object constitutes the work”.

In most laptop performances the audience sees the performer standing or sitting behind the computer, attentively watching the monitor while moving the mouse and pushing keys on the keyboard. The physical expression of the body is reduced to facial expressions. The Laptop performer resembles an operator who carefully performs tasks with the machine more than a performer in the traditional sense of the word.

According to the The Clubtransmediale 2004 press release: “The laptop hype is over. Laptop performers, who resemble a withdrawn scientist publishing results of laboratory research, are now just one role-model amongst many. Electronic music takes a turn towards being more performance based, towards ironic playfulness with signifiers and identity, and to being a more direct communication between the public and the artists.”³⁷

The same crisis occurs between laptop musicians and performance as one musician can now produce his/her music alone. Musicians are resolving the problem by also playing musical instruments like guitars (Fennesz) or toy pianos (Heidi Mortenson) at their concerts.

The question arises of how to form a relationship with the audience and create “liveness” during the performance? This can be a challenging issue in a laptop performance, as the audience can not see what the live cinema artist is actually doing with the laptop. How would the audience know if they were watching a playback of a DVD? It is also challenging for the performers, to perform and use the software at the same time, as the live situation requires their total attention.

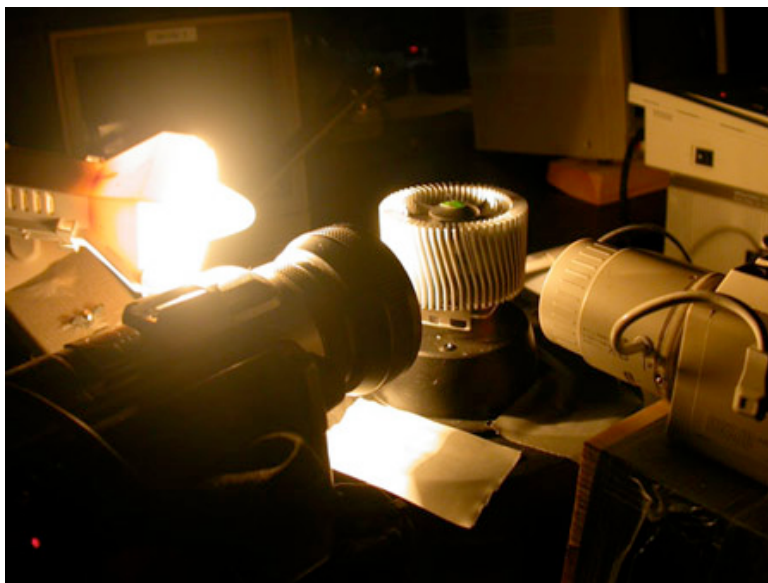
³⁷ The Clubtransmediale 2004 press release

3.4.2. “Liveness”

After a performance I am often asked what I did live. I wonder how the experience of watching visuals changes by knowing whether it is done live or as playback ? In TV shows, musicians play electric guitars, while it is obvious that it is playback as the guitar is not even plugged into the amplifier. The musician’s presence is more important. On the other hand, there arguably exists a certain sense of betrayal and doubt on the part of the viewer.

London based Slub has resolved this problem by using two projections; one with a view from their desktop and another with the view of the results. This enables the audience to know what they are doing, which in their case is coding. In this case, the body still remains static and the attention focuses to the projection screen.

It is quite obvious that a laptop is not the best tool to bring the body into the performance, as concentrating on what is happening on the screen limits the physical actions to moving the mouse, or turning knobs on a midi controller, which might not be the most interesting sight for the audience. On the other hand, the necessity to “prove” liveness can lead to performances where live becomes the content of the show rather than the material of the performance.



AVCENTRALEN

There are audiovisual groups who have successfully united liveness and content, including the Swedish audiovisual group AVCENTRALEN. At the Pixelache Festival in Helsinki in

2003 their whole performance was based on the live camera work. They had set up a "visual laboratory" of different miniature scenes set up; in one they dropped coloured powders into a glass of water which was shot (close up), with the video camera. In the projection, the image from the camera had transformed into an abstract visual world. Without having seen the setup, it would have been impossible to define how the projections were produced. In this case, watching the process of "creative misuse of technology" and the results became interesting for the public.



S.S.S Sensors_Sonics_Sights

3.4.3. Gestural interfaces

Justin Manor, MIT graduate (2003), wrote his thesis on gestural performance tools for realtime audiovisual performance. He also produced the Cinema Fabrique instrument, which allowed the control of the audiovisual environment with gloves, especially designed for realtime visual performance. Data gloves and sensors are also the performance tools of S.S.S Sensors_Sonics_Sights, a performing trio formed by Cecile Babiole, Laurent Dailleau, and Atau Tanaka who take laptop performance to another level by creating the audiovisual worlds by their movements and gestures.

In order to fully implicate the body fully in the performance, visual instruments, datasuits, datagloves, and sensors are used in order to allow the body of the performer to be more active. Using this kind of equipment requires technically demanding set-ups and also programming skills. Controlling the performance with gestures and movements is also a

valuable skill. Gestures can limit the whole range of possible controls available in the software. Another issue is the meaning of the gestures in the performance ? Should they have a corresponding effect in the visuals ? Without this kind of correspondence the performer's actions can become vague for the audience. In a piano concert, when a pianist presses the keys, the sound immediately corresponds to the actions of her fingers. If the pianist plays faster, the speed of the music accelerates. If this correspondence were to suddenly disappear, the audience would immediately think it were a playback. The key concept in gestural interfaces is realtime correspondence between the actions and the results.

I believe that in spite of the new possibilities offered by digital technologies, the content of the performance should still count the most, and an interesting audiovisual experience as a whole is worth striving towards, with or without the involvement of the body. "Classical" videomixing and processing can offer fascinating insights to the nature of images. Even though performance is a vital element in the live context, creating new narratives for visual culture is equally important.

3.5. PARTICIPATION

In cinema the public does not generally have a very active role, though the experience of watching a movie cannot be called passive either. As Kuleshov argued, watching is an act in itself, and the viewer is actively making connections in her mind, remembering, feeling, even though she could not interfere with the actual film.³⁸ The viewer is making the story and creating meanings in his or her mind.³⁹ In cinema the public does not participate in the creative process of movie making, although the viewer can decide which films they watch and thus choose which directors have more possibilities to get funding for their work in the future.

TV continues the same traditional role of the public, although occasionally throughout history some experiments pop up. Interactive-TV was hyped about couple of years ago, when digital TV was on our doorsteps. Nowadays sending SMS messages from mobile phones to programs have become popular. In Finland, there is a late night programme dedicated to SMS messages in which a presenter sits beside the arriving texts and reads and comments on them to the spectators.

In the 60's video artists responded to TV's "one to many" formula by transforming the signal and creating video installations, where the viewer formed part of the work. Video cameras played a central role in these experiments. In these installations, the viewer became the protagonist and her body and actions played a central role. Many installations did not exist without the viewer's presence. In Bill Viola's video works like *Instant Replay* (1972) the viewers' image is captured and presented in two monitors in the exhibition space. In the first monitor they see themselves in the present moment and in the other with seven seconds of delay. In another installation called *Decay Time* (1974), the public enters a dark space where there is barely visible projection on the wall. Suddenly, they receive a strong flash, during which their image is shown in the projection. Shortly after, the space becomes dark again and the viewers are left with after images, while they adapt to the change of lighting.⁴⁰ As these examples show, time has been the central theme in many video installations. These installations were also called "video environments", and they paved the way for the interactive installations of the 90s, in which computer controls the environment.

Virtual reality environments are perhaps the most immersive experiences for the public.

³⁹ Lev Kuleshov: Kuleshov on Film

⁴⁰ Laura Baigorri: Video: primera etapa

Rather than being a spectator or forming part of the projections, the public's role becomes that of a visitor in the installation space, or a user who controls the interface of the installation.

"The participatory aspect of audience as performer is implicit in most VR sessions.

Long before mobile media drew the public into public performative modes of participation, Brenda Laurel was already exploring these in her 'Place holder' experiment at Banff in the early 1990s. Participants could create their own stories within the broad boundaries set by the artist. Laurel's work fused improvised theatre with the cutting edge of VR simulation, combining sensor feedback for arms and torso as well as hands and head. The participants could alter their voices electronically to match the mythic characters whose identity they assume, and can swim or fly through the recorded video landscape mapped onto a computer 3D model. A decentered world incorporating elements of shamanism."⁴¹

In 1997, I visited a project called "World Skin- A Photographic Safari into the Land of War" by Maurice Benayoun and Jean-Baptiste Barriere, at Ars Electronica's virtual world environment CAVE, which impressed me strongly. It was a powerful visual experience even in its simplicity. A ruined postwar city with its survivors standing as 2D cardboard figures in the space. We, the audience travelled through this space taking photos, and the images "taken", disappeared from the world, and were printed out immediately. In this case, one of us was in control of the movement in the space, while others took pictures. One of the complex issues of interactive installations is the controlling system, as multiuser environments are challenging to design. Who controls it and what does she control? How does her decisions affect the other users of the installation? Perry Hoberman has managed to create many interesting multiuser environments, like "Faraday's Garden" in which the "visitors walk through a landscape of household appliances, power tools, radios, projectors, etc. While walking the visitors activate the machines by stepping upon the switch matting system which triggers the machines. Interaction in Faradays's Garden fluctuates between a sense of complete and effortless control to the lingering and disturbing feeling that these machines are somehow alive, sensing and responding to your presence."⁴²

Messa di Voce, is an installation designed by Golan Levin and Zachary Liebermann in which several visitors can interact with the environment simultaneously. The visitors control the projections by their voice and gestures. Their gestures can make different shapes and forms, in bigger and smaller sizes, depending on the volume of their actions. Therefore, playing with

⁴¹ Martin Rieser: Place, Space and New Narrative Forms

⁴² Unexpected Obstacles - the work of Perry Hoberman

the projections resembles performing.



Levin, Lieberman: *Messa di Voce*

“The active participation of audience is not original nor is it disruptive of narrative diegesis; it is merely incompatible with certain Narrative conventions, which have become unduly privileged by historical accident.”⁴³

Live cinema performances can be a mixture of VJing, cinema and interactive installations. As Rieser points out, “cinematic narration seems quite incompatible with interactive installations.....Narrative as a spatial metaphor is ubiquitously implicit in a multiplicity of ways: in mythology (Aboriginal Songlines); in the visual arts (sculptures of Richard Long) and everywhere in architecture and engineered social space. Nor are the currently imagined forms of our digital Narrative spaces particularly original, apparently in primitive nomadic cultures such as Australia and Melanesia the story spaces are “...imagined not like trees, but like rhizomes, capable of reconnecting and not necessarily hierarchically organised. Jurg Wassman describes Nyaura knotted cords used in recalling secret relationships between mythical migrations and clan names. He shows interconnections between religious secrecy and myth forms in which time is congealed by being placed in a spatial model of the past, centred on contemporary concerns. Roy Wagner points to the anthropomorphic quality of “maps” that contain stories of how they were made. Here travelling is central to describing place, the landscape is embodied, and the human body projected on the land. Multi-lineal possibilities of new media are not in themselves of any advantage in developing narratives. Economy and compression are usually hallmarks of successful artistic work, and cinematic conventions are based on it’s powers of visual shorthand and suggestion, with the audience filling in the details.”⁴⁴

⁴³ Martin Rieser: *place, Space and New Narrative Forms*

⁴⁴ *idem*

4. THE LANGUAGE OF LIVE CINEMA

What could be the language of live cinema? In order to define first what IS visual language, I start by reflecting on the cinema language. As I have already discussed, cinema is in essence, linear storytelling. Alexander Mackendrick reflects on the silent movies in his article “The Pre-Verbal Language of Cinema”, as follows:

“Through the use of different screen sizes and the framing of shots, the juxtaposition of camera angles and point of view, expressive music and lighting, and the principles of editing, they found that the camera can, uniquely, photograph thought. Since that time, those directors who have made the best use of the film medium have used the camera to communicate to audiences at a level far more immediate and primitive than the spoken word. By primitive I don’t mean more simplistic and less subtle. Far from it. Cinema deals with feelings, sensations, intuitions and movement, things that communicate to audiences at a level not necessarily subject to conscious, rational and critical comprehension. Because of this, the so-called ‘language’ the film director uses may, in fact, make for a much richer and denser experience. Actions and images speak faster, and to more of the senses, than speech does. A recurring theme of these notes is that cinema is not so much non-verbal as pre-verbal. Though it is able to reproduce reams of dialogue, film can also tell stories purely in movement, in action and reaction. Cinematographic images, particularly when synchronised with recorded sound, deliver such quantities of visual and audible data that the verbal component (even, in the days of silent cinema, title cards) is overwhelmed and becomes secondary. Consequently, the essential and underlying meaning of film dialogue is often much more effectively transmitted by a complex and intricate organisation of cinematic elements that are not only not verbal, but that can never be fully analysed by verbal means.”⁴⁵

⁴⁵ Mackendrick, Alexander: The Pre-Verbal Language of Cinema

4.1. CINEMA LANGUAGE VS LIVE CINEMA LANGUAGE

The communication of cinema is constituted by shots and their order. A shot can be a close-up which emphasises facial expression and emotions. Mid-shot emphasizes body gestures, and is the most widely used shot type in cinema. Long shot emphasizes the scene. Most filmmakers use it simply to establish the setting of the story.⁴⁶ Continuity is the key concept of cinema. This is mainly constructed in the editing process, although camera work plays an important role. In camera work different rules, like the 180 degree axis, dictate the way the scenes are constructed. Lighting, actors, costumes, make-up, scenery and props apart from the camerawork help in the construction of a scene.

In live cinema, many artists are one-person-bands, and construct the scenes, shoot the material, manage post-production and construct/program their tools/interfaces to present the work, as well as performing the “montage” process in live situation. I have not seen live any cinema performances to date where each shot would have been carefully planned and shot with a film group. Most live cinema artists go around with their digital camcorders and record what they find visually interesting, then mix or process this material in realtime. I have remixed video artist Leslie Thornton’s works. I chose the parts of her films which I found visually interesting and then constructed a new “story”, in collaboration with a musician. It was also interesting for Thornton to see her work from a new angle.

Most of the movies we have seen have a similar narrative structure: The film begins by presenting the characters in their daily environment, soon after a conflict appears: Someone is kidnapped, falls ill, dies, is seduced, blackmailed or gets involved in a crime. Towards the end of the film a solution is reached through several crises. The narration in live cinema does not usually follow this kind of structure, even though I believe that creating expectation and tension is possible also with different kinds of visual structure. The majority of feature films, animated movies and commercials are based on script, on a narrative story which is then transformed into a storyboard. A storyboard is the order of the shots, and the description of each of them, which serves as a basic structure for shooting the material and editing it.



A storyboard for Simpsons

Live cinema performance is also constructed from building blocks like video clips, or in the case of abstract imagery, the structure can be thought of as variations of rhythms, movements, colors and shapes in order to arouse (emotional) responses in the spectators. live cinema has more "open architecture" than cinema, so there are more possibilities to build the performance.

In cinema, the rhythm and overall tone of the film is constructed during the editing process. Montage is a term used for film editing, and in the Soviet film-making of the 1920s, was theorized to be the essence of cinema. In live cinema, the montage is constructed live, but the theories can still give insights about how to construct meaning in cinematic language. As montage is not a very useful tool for abstract imagery, I propose that the principles of musical composition could be helpful in constructing structure for non-figurative visuals. As such, I discuss two methods for constructing meaning in live cinema performance: Montage and composition.

4.2. MONTAGE

In traditional cinema, story and dialogues are the central elements of the films. The continuity of the story is mainly produced with montage techniques. Even though the Americans were more advanced in using montage in the early days of cinema⁴⁷, it was the Russian film makers, led by Lev Kuleshov, who theorized montage and considered it the essence of film language. For Kuleshov, montage was basically the organization of cinematic material. After studying various films with his students, he realised that the speed of which the shots were edited was essential. Moreover, he realized that the Russian public seemed to prefer American movies for this reason. In one of the experiments the group performed, an actor was shot expressing himself differently in two shots; one in which soup was put in front of a starving man, and another in which a door was opened to a prisoner. Although the actor performed differently, the audience didn't notice any difference in his expression. Kuleshov drew the following conclusion from this: "With correct montage, even if one takes the performance of an actor directed at something quite different, it will still reach the viewer in the way intended by the editor, because the viewer himself will complete the sequence and see that which is suggested to him by montage."⁴⁸ In another experiment, the group constructed a woman who did not exist from separate film strips. Kuleshov described the experiment: "By montage alone, we were able to depict the girl, just as in nature, but actually she did not exist, because we shot the lips of one woman, the legs of another, the back of a third, and the eyes of a fourth. We spliced the pieces together in a predetermined relationship and created a totally new person.. This particular example demonstrated that the entire power of cinematic effect is montage."⁴⁹ Indeed, Kuleshov was absolutely convinced of the power of montage over the material, as continuity alone is enough to convince the audience of the reliability of the narration. The basic discovery of the montage theorists was that image A cut with image B creates meaning C. An image of a face followed by an image of a gun could express fear, and the same face followed by an image of food could express hunger.

Sergei Eisenstein followed in the footsteps of Kuleshov by exploring the expressive qualities of montage. In his film "Strike!" (1924) "shot A of the workers' rebellion is juxtaposed with shot B of cattle being slaughtered and the synthesis yields the symbolic meaning C, that the workers are cattle. This technical innovation (which Eisenstein dubbed intellectual montage) resulted from his studies of Kuleshov's famous experiments and of Japanese ideograms."⁵⁰

⁴⁷ Kuleshov on Film – Writings of Lev Kuleshov

⁴⁸ idem

⁴⁹ Kuleshov on Film – Writings of Lev Kuleshov

⁵⁰ Dan Shaw: Sergei Eisenstein, article on the website Senses of Cinema

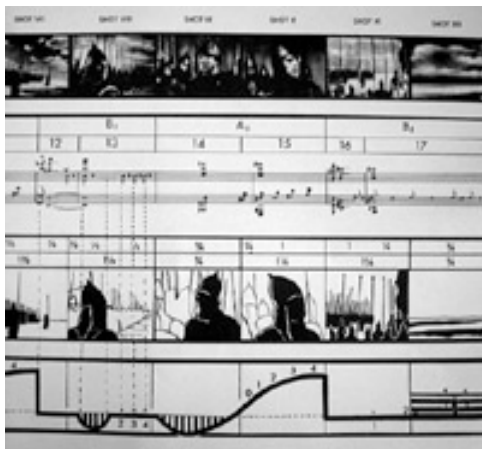


Eisenstein: Stike! Shot A



Eisenstein: Strike ! Shot B

Eisenstein also experimented with various editing techniques he called: “metric, rhythmic, tonal and overtone.”⁵¹ He cut his film “Alexander Nevsky” (1938) to the rhythm of pre-existent music and not just had the music played or composed to match the film: He also discovered that film cut metrically to the beat of a heart had a profound impact on viewers as it mirrors our biorhythms.⁵² “His films were composed of an astronomical number of shots, a necessity when, say, you are trying to capture the power of a machine gun by cutting as rapidly as it fires bullets”⁵³. His film Battleship Potemkin (1925) contains almost 1350 shots (86 minutes running time).



Sergei Eisenstein: The Film Sense, Score for Alexander Nevsky

Eisenstein’s montage techniques could be seen as the beginning of VJing. The way he used sound as the basis of the visual montage is how contemporary live visuals are usually presented. Eisenstein understood the effect of rhythm and juxtaposition on the viewer, just like the video scratchers. Video scratching was one of the first genres of live visuals, and were often politically oriented. Groups like London based Hexstatic and Exceeda continue in Eisenstein’s footsteps. Hexstatic has also collaborated with Pioneer in the development of the DVJ-X1 mixer, which was launched in 2004. With this tool it is possible to scratch, loop and

⁵¹ Sergei Eisenstein: Methods of montage

⁵² Dan Shaw: Sergei Eisenstein

⁵³ idem

cue video in realtime, while audio stays in precise synch with the video. To some extent, Eisenstein's theories have now materialized as a product.

Montage can also be spatial. Lev Manovitch suggests it was the dominant mode of representation until the rise of western science.

"...All in all, in contrast to cinema's sequential narrative, all the "shots" in spatial narrative are accessible to the viewer at once. Like nineteenth-century animation, spatial narrative did not disappear completely in the twentieth century, but rather, like animation, came to be delegated to a minor form of Western culture-comics. It is not accidental that the marginalisation of spatial narrative and the privileging of the sequential mode of narration coincided with the rise of the historical paradigm in human sciences.....Although digital compositing is usually used to create seamless virtual space, this does not have to be erased; different spaces do not have to be matched in perspective, scale, and lighting; individual layers can retain their separate identities rather than being merged into a single space; different worlds can clash semantically rather than form a single universe."⁵⁴



Panel of Saint Dominic de Guzmán (First quarter of the fourteenth century)

The panel above presents a spatial montage in a tempera painting from the 14th century, which is currently in the collection of MNAC in Barcelona. According to the description on the web site of the museum: "It contains twelve scenes from the life of the saint, six on each side of the central compartment, where Saint Dominic is shown standing, with the book and a staff with the fleur-de-lis, alluding to his chastity and the saint's devotion to the Immaculate

⁵⁴ Martin Rieser: Place, Space and New Narrative Forms

Virgin, an attribute he also shared with Saint Francis and Saint Anthony of Padua. The large number of scenes depicted in this work clearly shows the important development, in these early days of Gothic in the Catalan-Aragonese Crown, of the narrative that singled out different circumstances from the lives of the saints.”⁵⁵

Here are some more examples of spatial montages in Hieronymus Bosch's paintings.



The Seven Deadly Sins and the Four Last Things (c.1485) The Garden of Earthly Delights Triptych (c. 1504)

Film makers such as Zbigniew Rybczynski and Mike Figgis have explored the possible narrations for multiple frame format. Juxtaposed images are normally understood as simultaneous action, i.e: Two persons talking on the phone to each other while the viewer can follow both of them at the same time. “In Timecode (2000), directed by Mike Figgis, The screen is split into quarters. Each quarter shows something different. The film was shot in real time, with guidelines rather than a script, and different camera crews following different sections. The only thing drawing your attention towards one part of the screen or the other is the volume of soundtrack.”⁵⁶



Mike Figgis: Timecode



Hexstatic: Telemetron

Timecode would be an example of live cinema if each of the camera crews had also broadcasted their images in realtime, and not just shot them. Martin Rieser points out in his article on Timecode: “While not interactive, is revolutionary in its approach to scripting, which takes the orchestration of a musical score and counterpoint as the model... As

⁵⁵ http://www.mnac.es/colleccio/col_gotic.jsp?lan=003&ambit=23

⁵⁶ <http://www.channel4.com/film/reviews/film.jsp?id=109378>

Manovitch points out in his quoted essay on Spatial montage, multi-screen and multi-linear may soon once more become the predominant contemporary forms of reception Multi-screen may be as old as cinema itself but, as with modernist painting, its purpose has altered over time from the immersive to the disjunctured. One thinks of Michael Snow's experiments in the 1960s or Warhol's "Inside Outside"⁵⁷

⁵⁷ Martin Rieser: Place, Space and New Narrative Forms

4.4. COMPOSITION

Many avant-garde film directors have used visual composition in their films. In his 1926 film “Mother”, Pudovkin composes various shots of the factory buildings on top of each other thus creating an aesthetically pleasing sense of the actual shapes of the buildings against the sky. Still, the majority of films employ direct cutting from one shot to another. It was during the video era that composing images became easier, as film as material is quite inflexible due to its linear nature.

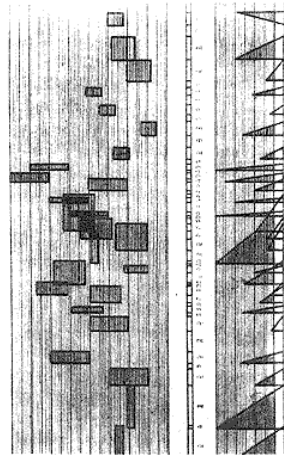
Early Video artists like Woody and Steina Vasulka, who had already started experimenting with video synthesizers in the ‘70s, used composition as one of their methods for creating videos. Videos are mixed together using different methods such as chroma and luminosity key in order to make certain colours and/or areas of the images transparent, allowing thus other videos to become simultaneously visible through these areas. The simultaneity of multiple “videolayers” makes the work resemble musical composition, specially if the video material is abstract.



Steina Vasulka: Lilith

As live cinema artists tend to use various clips or visual layers simultaneously, mixing them together is similar to musical composition, in which various instruments are meant to be played together, in different combination of rhythms, volumes and patterns. Abstract visuals could be better analyzed as if they were music, including their compositional strengths and weaknesses, rhythmic structure, beauty etc...Unfortunately, we are not used to listening to visuals but rather to watching them attentively, looking for a story.

The musical scores which consist of notes for composition can also be conceptually interesting for live cinema and some VJs have already noticed their value like, VJ Anyone⁵⁸. The German composer Karl Stockhausen's scores for his compositions are based on visual elements that differ from traditional notes.



Karl Stockhausen

The image above could be imagined to describe an audiovisual composition, each block symbolising different visual elements next to an audio track. The blocks could have different presentations depending on the needs of the performer.

In "A Practical Guide to Musical Composition", Alan Belkin describes the fundamental principles for musical composition. The notions of human psychological perceptions can be considered to work equally well for both hearing and sight. He mentions several principles including "**foreground vs background**" which deals with the prioritizing of perceptions as we cannot pay equal attention to more than one element at any given time. "**Complexity, novelty, loudness and richness**" are the factors which determine the direction of our attention. Usually the element with the greatest level of activity (e.g movement) attracts the most attention, even though the novelty and the loudness of the element also affect, as for example a strong visual element like a face can win over a rapidly moving background, even if it had lots of details (richness) or loudness (strong red colour) . Another important principle is "**Flow vs Break; continuity vs. surprise**". These deal with the unity of the piece, the connection between different events, long range association and overall balance. If the flow of the piece provides little novelty it becomes boring, but if there is continuous change without connections, the work's coherence suffers. If the foreground elements are new, the effect will be one of contrast, and if the changing elements are more subtle, the sensation is gradual evolution and stability. "**Rate of presentation of information**" deals with the speed at which new elements arrive: The quicker the pacing of new events, the more exciting the

⁵⁸ Timothy Jaeger: Live Cinema Unravelling

effect. "**Stability vs. instability**" describes the sensation of structure of the piece, as fast, sudden changes presenting distinct ideas can give the impression of instability, as the audience need time to absorb new elements before they are superseded. "**Progression**" deals with the overall sense of direction of the piece. Progressions are useful tools to create expectations and therefore tension e.g by using incremental series of events. "**Momentum**" can be the breaking moment of change (climax) for the incremental series of events although it also acts on a rhythmic level, as a certain level of rhythmic activity is hard to abruptly change without some punctuating event. "**Balance**" is described by Belkin as follows:

"One way to approach the problem of balance is psychologically. A musical work has a "trajectory", engendering a kind of internal voyage in the listener. This voyage takes the listener over varied emotional terrain in a coherent way. The composer's goal is to engage the listener, to maintain his interest and to increase his involvement during the whole voyage, and then finally to lead him back to the normal, external world in a fulfilling way. We call the experience "balanced" when the listener feels satisfied with the experience as a whole. Of course, this does not mean that the experience is necessarily pretty or pleasant - the emotional world may be serious or even troubling - but that the work seems meaningful in an integrated way."

The sense of balance is also closely linked to length, as longer duration implies greater contrast. On the other hand, in Belkin's words: "Strong contrasts, especially if presented with little or no transition, tend to demand longer forms. The reason for this may not be immediately evident."

These principles can give valuable insights to the inner structure of live cinema performance even if the material is abstract. Rhythm, dynamics, movement, direction, speed, colour, intensity and richness are the basic elements required to create meaning in live performance, besides the imagery. These elements can be further strengthened and contrasted in dialogue with the audio.

4.5. VISUAL EFFECTS

Visual effects have their own language as well, even though the connotations can differ according to the context. In cinema, certain effects have already established commonly accepted meanings, i.e: When an image starts to get blurry it signifies that a dream or a memory sequence is starting. Some directors, like Tarantino, have used frozen frame, to mark a meaningful moment in the film. Still/frozen frame and wipe are interesting effects as they show us the world in a way we cannot experience in real life, as in real life we are continuously perceiving only the present moment.



Nam June Paik: Magnet TV

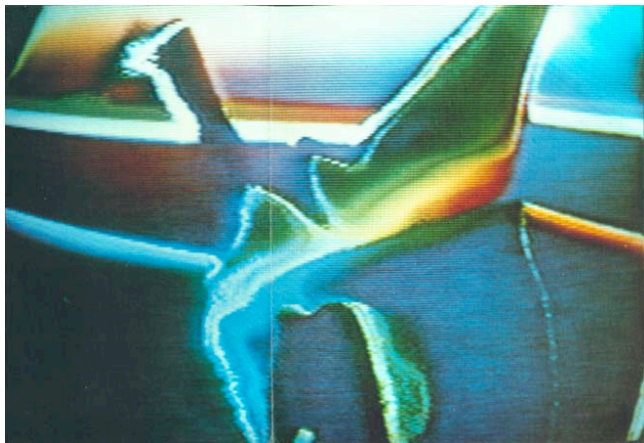
Video artist Nam June Paik attached a magnet to the Tvscreen in 1965, creating interference to the transmitted image/signal. The magnet converted into an analog realtime video effect, later recreated with the video synthesizers and then later still in computer softwares. Realtime image manipulation was born as a reaction against the TV's "one to many" broadcasting method, thus rendering the public to passive receivers of (political) propaganda. Realtime video effects like the magnet were thus considered as empowering tools for spectators of mass media. Taking this into account, what are the reasons in the contemporary live cinema context for using video effects, if not purely for aesthetic reasons?

From the dawn of realtime projections, effects have been sought after for their "magical" qualities. Even the early magic lanterns had built-in dissolve effect and options for mixing

between various image layers.

Video performance pioneer, Carol Goss describes her sensations of feedback effect in her article "Driven to abstraction"⁵⁹ written in 1998, as follows:

"This loop between the camera viewing the cathode ray tube and the cathode ray tube displaying the image of the electron beam slightly off centre, magically created a dynamic image with multiple interpretations of itself - all depending on how you played with the aperture, focus, or angle of the camera. If you did too much the image would go crazy, out of control. If you did too little the movement would die. If you could maintain a harmonious range of movement then images could be made to dance. It was never a solo venture though. One was always aware that one was collaborating with the raw force of electricity.... Working alone for 18 hours straight day after day permitted insights that would not have occurred in a more social environment. The feedback images resembled mandalas. Any sixties person would recognise this instantly. The question was, "why?". Which came first: the Buddhist mandala or the electronic mandala? Was Itzhak Bentov's theory of the universe as a torus with all energy moving in a helix the basic paradigm, and video feedback and Buddhist mediation mandala's just manifestations of it?"

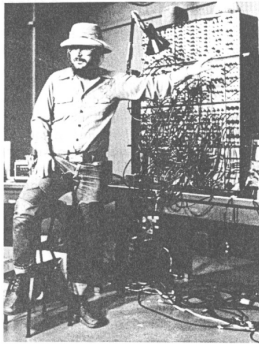


Carol Goss: Topography

Video synthesizer⁶⁰ electronically creates TV signals without necessarily requiring the use of a TV camera. Moving abstract patterns, text subtitles, colourized or processed camera images can all be in the output of a video synthesizer. The first analogue video synthesizers included the Sandin Image processor (1971-74), the Rutt-Etra (1972) and Paik/Abe synthesizer (1969)

⁵⁹ <http://www.improvart.com/goss/everson.htm>

⁶⁰ [Latin, collection, from Greek synthesis, from suntithenai, to put together : sun-, syn- + tithenai, to put.]



Sandin Image Processor



Paik/Abe

The early effects were produced by oscillators, raster manipulation and the colorizers.

"The real thrill for me was the colorisers. There were two at the Centre: David Jones' and the Paik-Abe. They were entirely different from each other. I first worked with the Paik-Abe and got such a rush from it that I was never the same afterwards. It is this one machine that hooked me for life on video art. The colors were indescribable. Magical things happened at the borders of shapes and colour fields. The intensity, the saturation, and the hues were lush. No one quite knew what made it tick, and I think there were only two or three of them made by Nam June and Shuya Abe. David Jones' coloriser was very logically organised. It allowed four b/w signal inputs to be keyed into each other with 100% control of hue, saturation, contrast, luminosity and video level on each channel. This provided great range and subtlety.

Using the tools available for making images out of sheer electricity with colorising synthesisers was like creating molten stained glass. In fact, to this day, I dislike projected video and dread the day when LCD screens replace CRTs. We will have lost that wonderful luminosity which only the "evil blue light" can deliver.

In retrospect, much of the excitement of working with early analogue video synthesis was the fact that one did not have total control. The process was highly interactive. That is something which has been entirely lost with digital tools. They provide their own limitations, of course, but there is no tug of war going on with a live force.... everything is very domesticated and predictable."⁶¹

The words "magical" and "amazing" are used often by the artists when they describe their sensations of creating realtime visuals. There also seems to be a connection with hallucinogenic experiences, some effects seem to recreate the patterns seen on LSD. The altered states of the reality. Even though Carol Goss sees digital tools as predictable, I have experienced the feelings of amazement and even magic while processing video with softwares. Adding two effects and changing the parameters can indeed yield surprising

⁶¹ Carol Goss: Driven to abstraction

results, it feels like digital alchemy. These two images are an example of my video processing experiments. The result was unforeseen.



Image A before processing

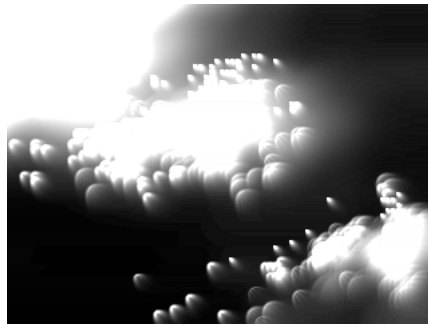
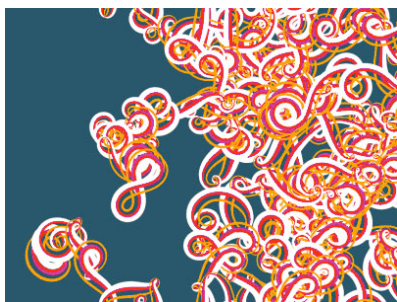


Image A after processing

Unfortunately, the audience probably can't enjoy seeing these images in the same way as they don't experience the same kind of surprise effect as I did. This is the main concern with realtime effects; they can easily become something that is nice to play with but the audience probably cannot get a similarly satisfying experience out of seeing them.

Processing images is relatively a recent form of creation made available by computer softwares like MAX/MSP/NATO, MAX/MSP/JITTER, Puredata and Processing. Processing software by Casey Reas is basically a visual platform for programming Java , but has quickly developed into an innovative tool for programming generative visuals.



Ben Fry



Casey Reas

5. CONCLUSIONS

This thesis explores elements and the language of live cinema. The goal of the thesis is not a comprehensive study of realtime audiovisual performances but aims instead to offer a set of guidelines for an enhanced understanding of live cinema. I have compared existing cinema language with possible live cinema language in order to define the structure of visual language in time based media. In his film theory, Eisenstein has defined different types of montage, like intellectual montage, in which juxtaposition serves as a tool for creating meaning in a film. In this thesis I have discussed similar tools which aid the analysis and the practice of live cinema performances. I have also proposed terminology like in the case of space, which I have mapped into 5 different concepts of spaces which live cinema artists deal with during a performance. The thesis is divided into two main parts: Live cinema elements and live cinema language. I have defined the essential live cinema elements which form part of each performance and then studied the specific characteristics of these elements in live cinema context, for example the special characteristics of time in realtime performance. Studying the essential elements has helped to define the live cinema context. In the live cinema language section, I approach methods of live cinema practice : Montage, composition and effects, in order to find a basis for creating meaning and possible “narration”. The narration in live cinema performances is influenced by the longstanding cinema tradition but also has a wide range of other possibilities, many of them still undiscovered.

The process of writing has helped me give form to the ideas, thoughts and dilemmas I have experienced during my live cinema practice. I have also learned a great deal about the influences and history of live cinema, which has given me inspiration and has also helped to understand the long trajectory of audiovisual live performances. Due to the wide range of these influences, mapping them has been an overwhelming task, as each of them would be worth a separate thesis. It has been difficult to scale down the area of study without leaving something important out. I found it challenging to unify all these influences which has resulted in fragmentation in the structure of the thesis, as I have dealt with certain concepts more and some others I have just mentioned. Comprehensive theories on live performance practice are sparse, although there are writers who have approached themes such as color and form in visual music and the sociopolitical context of Vjing. Still, building a complete picture from these different approaches has been challenging. In order to discuss the nature of live cinema I have had to rely strongly on my own investigation, which converts this thesis into a mapping of an “unknown territory” rather than a study based on existing theories. Thus I find proving my hypothesis on creating a live cinema language to be a complicated task. At the

moment I can not offer a complete grammar for live visuals although I have made great progress in defining the genre and practice. Further investigation would be necessary and different methods, like studying audience reactions on live visuals, could result as rewarding. Nevertheless, I hope this thesis offers interesting ideas on live cinema structure and language and could serve as a basis for further discussion.

This thesis has helped me to better define the concepts I deal with in my work. What kind of stories can be told in live ? The answer would require another whole thesis, but I am confident, that within this one, I have scratched the surface of this definition.

BIBLIOGRAPHY

BOOKS

- Baigorri, Laura: VIDEO: PRIMERA ETAPA. Brumaria 4. Asociación Cultural Brumaria, Madrid. 2004
- Bazin, André: Qué es el cine? Ediciones Rialp, S.A. 2000
- Berger, John: Modos de Ver, Editorial Gustavo Gili, SA. 1974
- Burnett Ron: How Images Think, The MIT Press. 2005
- Cubitt, Sean: The Cinema Effect, The MIT Press. 2004
- Magdalena Dabrowski: Kandinsky: Compositions, Harry N. Abrams. 1997
- Eisenstein, Sergei : The film Sense, Harcourt; Rev. Ed. 1969
- Goldberg, RoseLee: Performance Art - From Futurism to the Present, Times & Hudson Ltd, London. 1979
- Jaeger, Timothy: live cinema unravelled, published by the writer. 2005
- Kuleshov on Film – Writings of Lev Kuleshov, University of California Press. 1974
- Manovich, Lev: The Language of New Media, The MIT Press Cambridge, Massachusetts. 2001
- Münsterberg, Hugo: The Film - A psychological Study, Dover Publications, inc. New York. 1970
- Parkinson, David: Historia del Cine, Asunto Impreso. 2002
- Paul, Christiane: Digital Art, Times & Hudson Ltd, London. 2003
- Spinrad, Paul :The VJ Book, Feral House. 2005
- Unexpected Obstacles - the work of Perry Hoberman, Exhibition catalogue, Gallery Otso, Espoo. 1997
- Wees, William C.: Light Moving in Time, University of California Press. 1992
- Wright Huntington, Willard: The Future of Painting, B.W.Huebsch, Inc. 1923
- Youngblood, Gene: Expanded Cinema, E P Dutton. 1970
- Zajonc, Arthur: Catching the Light : The Entwined History of Light and Mind, Oxford University Press, USA. 1995

ARTICLES / THESIS

- Avery, Paul: Some Readings in the Early History of Light <<http://www.phys.ufl.edu/~delamater/historyoptics.pdf>>
- Beckman, Rene: Composing images <<http://www.xs4all.nl/~rbeckman/l&b.html>>
- Bishop, Bainbridge: The harmony of light <<http://rhythmiclight.com/books/HarmonyOfLight.pdf>>
- Collopy, Fred: Color, Form, and Motion (2000) <<http://www.kether.com/liveCinema/SFPCS/Collopy-designing.html>>
- Collopy, Fuhrer, Jameson: Visual Music in a Visual Programming Language, 1999 IEEE Symposium on visual languages
- Connelly, David: Visual Velocity, Indie Slate, 2001
- Daniels, Dieter: Sound & Vision in Avantgarde & Mainstream
<http://www.medienkunstnetz.de/themes/image-sound_relations/sound_vision/>
- Daniels, Dieter: The Birth of Electronic Art out of the Spirit of Music
<<http://www.hgb-leipzig.de/index.php?a=person&b=mitarb&c=&d=&p=317&js=2&>>
- Dekker, Annet: Synaesthetic performance In the Club Scene
<<http://www.cosignconference.org/cosign2003/papers/Dekker.pdf>>

DeWitt, Tom: "Visual music: Searching for an aesthetic," *Leonardo*, 20, 1987
 <<http://rhythmidlight.com/articles/DeWitt.pdf>>

Drew, William M.: Abel Gance (1889-1981) <http://www.gildasattic.com/gance.html>

Export, Valie: *Expanded Cinema as Expanded Reality*, 2003, Senses of Cinema

Flint, Rob: *performance, improvisation and image-processed video* (FilmWaves/Artinsight, 2004)

Furlong, Lucinda: *Notes toward a History of Image-processed Video:Steina and Woody Vasulka*
 <<http://www.experimentaltvcenter.org/history/people/ptext.php3?id=26&page=1>>

Furlong, Lucinda: *Notes toward a History of Image-processed Video:Eric Siegel, stephen Beck, Dan Sandin, Steve rutt, Bill and Louise Etra* <<http://www.experimentaltvcenter.org/history/people/ptext.php3?id=24>>

B.Galeyev, I.Vanechkina: Was Scriabin a Synaesthete? <http://prometheus.kai.ru/skriab_e.htm>

Goss, Carol: *Driven to Abstraction* <<http://www.improvart.com/goss/abstract.htm>>

Hiddink, Jan: *live cinema enters clubculture* <<http://www.live-cinema.org/content/view/60//>>

Hiddink, Jan: *An Interview with Hans Beekman, 2005* <<http://www.live-cinema.org/content/view/59//>>

Ilhein, Lucas: *Pre-digital new media* <<http://www.realtimearts.net/rt66/ilhein.html>>

Levin, Golan: *Painterly Interfaces for Audiovisual Performance* <<http://acg.media.mit.edu/people/golan/thesis/>>

Lew, Michael: *live Cinema:Designing an Instrument for Cinema Editing as a live Performance*
 <<http://alumni.media.mit.edu/~lew/research/livecinema/Live%20Cinema%20NIME%202004.pdf>>

Machon, Josephine: *(Syn)aesthetics and Disturbance - A Preliminary Overview*
 <[http://people.brunel.ac.uk/bst/1nol2/Josephine%20Machon/Josephine%20Machon%20-%20\(syn\)aesthetics.htm](http://people.brunel.ac.uk/bst/1nol2/Josephine%20Machon/Josephine%20Machon%20-%20(syn)aesthetics.htm)>

Mackendrick, Alexander: *The Pre-Verbal Language of Cinema*
 <http://www.thestickingplace.com/html/Mackendrick_Pre-Verbal.html>

Moritz, William: *The Dream of Color Music, And machines that Made It Possible,The Spiritual in Art: Abstract Painting 1890-1985*, ed. Maurice Tuchman. Abbeville, 1993

Moritz, William: *Visual Music; Cave Painting to MTV, Sound & Vision*, 1993

Moritz, William: *Oscar Fischinger, Artist of the Century*, Animac Magazine, 2001

Moritz, William: *Mary Ellen Bute:Seeing Sound* <<http://www.awn.com/mag/issue1.2/articles1.2/moritz1.2.html>>

Palmer, Daniel : *participatory media-visual culture in real time*, doctoral thesis 2004
 <<http://eprints.unimelb.edu.au/view/year/2004.html>>

Poole, Jean: *A brief History of VJing in Australia* <<http://www.skynoise.net/>>

Rendel, Mats: *Athanasius Kircher* <<http://user.bahnhof.se/~rendel/engint.html>>

Martin Rieser: *Place, Space and New Narrative Forms*, Bath Spa University College,
 <http://www.intermedia.uio.no/projects/designingdesign/concepts_methods/pres_files/reiser.pdf>

Saul, Shiralee: *Technologies of Time and Space:a Prehistory of Multimedia* updated 2001
 <<http://www.labyrinth.net.au/~saul/essays/01prehist.html>>